# FEEDSTUFFS

★ A WEEKLY NEWSPAPER ★

FOR THE FEED MANUFACTURER, JOBBER, BROKER and DEALER

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## Production School Board Appoints Trustees, Officers

KANSAS CITY—The appointment of 28 trustees and officers of Feed Production School, Inc., was announced this week by the board of directors of the newly formed corporation which has taken over sponsorship of the annual Feed Production School from the Midwest Feed Manufacturers Assn.

In its initial action, the board of directors adopted by-laws, named members and officers of the board of trustees and elected officers of the board of directors.

By-laws of the nonprofit corporation provide for a maximum of 50 trustees. In naming the 28 just appointed, the directors aimed at establishing a broader geographical representation and at bringing in the service of skilled people from other parts of the U.S. for the planning of production schools and research programs.

Specifically provided for on the board of trustees are representatives from the following associations: American Feed Manufacturers Assn., Grain Processing Machinery Manufacturers Assn., Grain & Feed Dealers National Assn. and Midwest Feed Manufacturers Assn.

The trustees already named will attend their first meeting at 2 p.m. May 12 in the Conrad Hilton Hotel in Chicago. (See list of trustees on page 5.)

Officers of the board of trustees

(Turn to PRODUCTION SCHOOL, page 6)

## *Canadian Official Says Hog Supports Not for Integrators*

WINNIPEG — Douglas Harkness, Canada's federal minister of agriculture, said he does not intend to operate the Agricultural Prices Stabilization Act "for the benefit of anyone except bona fide farmers, and of course, consumers" in an address before the Meat Packers Council in Ottawa recently.

Last month Mr. Harkness announced that the price support on hogs would be cut Oct. 1. His statement to the House of Commons at the time was:

"The Agricultural Prices Stabiliza-

(Turn to CANADIAN, page 5)

# Institute Offers Guides To Agricultural Changes

LAFAYETTE, IND. — Most feed men do not have to be reminded that there are some real changes going on in animal agriculture and in the feed business, but they may be looking for some guides as to how to adapt their operations to both short-term and long-range changes.

Some guideposts for feed men as well as others concerned with the whole broad picture of livestock and poultry production and marketing were provided this week at the annual conference of the National Institute of Animal Agriculture at Purdue University.

The theme of the conference was "Changing Patterns in Animal Agriculture," and persons on hand were advised by agricultural economists and other experts as to what they might look for in the way of changes which will require adaptations of agricultural businesses.

Speakers pointed out such trends as increasing size of production units, specialization, geographical shifts and new marketing procedures. However, there also were indications that the many changes are not coming overnight, nor will they necessarily go so far as some have indicated.

For example, one speaker said that while certain changes will continue, the modest size, less intensive operations may be "able to compete for a long time," and "management of the production phase of agriculture is likely to remain largely in the hands of the farmer."

At any rate, as one speaker indicated, the livestock and related industries are fortunate that the prospective adjustments in farm techniques, between areas and among firms serving agriculture can be done in a framework of an ever expanding demand for livestock products. The adjustments will be much less painful than if they had to occur in a static demand situation.

Following are summaries of conference talks:

**THE GOAL WE FACE**—Dr. Earl L. Butz, dean of agriculture, Purdue, described the current problems of agriculture as being two-fold. These problems, he said, are:

"1. We must be prepared to make intelligent adjustments in our indus-

(Turn to INSTITUTE, page 105)

• • •

# Animal Agriculture in Orbit *or* *We Ain't Seen Nothin' Yet*

LAFAYETTE, IND. — A breakthrough in the field of molecular biochemistry may simultaneously result in new vaccines, solve the cancer problem and bring about production of male or female animals at will, a Purdue University animal scientist declared this week.

Dr. Frederick N. Andrews, speaking at the annual banquet of the annual conference of the National Institute of Animal Agriculture, also asserted that "the development of a sexless, multipurpose animal is a distinct possibility."

If some of the possible developments come about, he indicated, "the past 100 years of biology would seem elementary."

"The astronomer, mathematician, chemist and physicist seem to have had the best of the 20th century thus far," said Dr. Andrews. "We have every right to expect that the biological sciences, which include agriculture and medicine, will have the big innings in the remainder of the century."

In a discussion of the nature of sex and its control, he noted that in species in which there are male and female determining sperm, there must be chemical and physical differences between the sperm. And practical separation of sperm types may not be far off, said Dr. Andrews. Then, for one thing, if sperm from pure, high milk producing strains of dairy cattle could be separated, there would be an overwhelming demand for female types. This would enable the dairyman to increase his herd more rapidly and selectively. Beef breeders would provide two markets for sex differentiated sperm—males for meat

(Turn to ANIMAL, page 101)

# Grain, Soybean Bills Given Little Chance for Survival

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON — It now appears that several pending bills which would boost the price support levels for soybeans and feed grains up to their feed value equivalent of corn have little chance of passage in Congress or of White House approval.

There are indications that these pending measures, which appear to be mostly "folks-at-home" issues, will probably gain House Agriculture Committee approval and may even pass the House.

However, one must consider the bills as little more than window dressing. An example is the proposal of Rep. Merwin Coad (D., Iowa) that soybean price supports be frozen at 1958 levels.

It may be suspected that the sponsors of the legislation may hope to obtain transient benefits from speculative market activity, as the subcommittee and the full committee of the House may approve these higher price support levels. But a prudent person may be assured that the transient shot-in-the-arm effect is that and nothing more.

Congressional opinion of substance indicates that there will be no legislation of this type in the current session of Congress, where it is probable that the only major action will be an attempt to reduce the price support

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## FEEDSTUFFS *Features This Week*

**PELLETING, WAFERING:** Production of pelleted and wafered forage products by new Oregon plant is described on **page 18.**

**PROTEIN ENERGY:** A review of studies concerning protein and energy requirements of chickens in egg production begins on **page 26.**

**EXPANSION IDEA:** How a Kentucky firm expects to build more feed sales with hog raising program is told on **page 39.**

**SALES:** A five-point check list for improving sales letters appears on **page 62.**

**MICROINGREDIENTS:** Causes and prevention of erratic values for feed microingredients are discussed on **page 66.**

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## *Cuban Molasses Sale Confirmed*

NEW ORLEANS — The Cuban Sugar Stabilization Institute has confirmed the sale of 80.6 million gallons of 1959-crop blackstrap molasses, according to Molasses Market News, publication of the New Orleans office of the Agricultural Marketing Service.

The publication had reported this sale unofficially March 18. The unofficial report set the price at 11¢ gal. f.o.b. Cuban port and indicated that molasses shipped against these contracts by April 30, 1959, would receive a discount of ¼¢ gal. for prompt shipment.

From an estimated Cuban production of 300 million gallons of blackstrap in 1959, Cuba now has assigned 202.6 million gallons, the publication said. Of this quantity, 80.6 million are for export and 122 million are for local use or manufacture. Cuba is also reported to have sold about 4 to 4.5 million gallons of invert molasses from the 1958 crop on

(Turn to MOLASSES, page 101)

# FEEDSTUFFS

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## *Top of the Hopper*

**WE'RE INTRODUCING** a new line of merchandise this week. About the closest we can come to describing what we have in mind is to declare on our tag that it will contain a mixture of news and comment. It won't be possible to apply a dignified term like "formula" to the mix. This would indicate some research was behind the product, that it would be uniform in quality and contain a carefully calculated balance of ingredients.

Such, of course, is not the case. As in a feed mill, a great variety of ingredients arrive daily in a communications mill, which is a fancy way to describe a publication. There similarity ceases. The ingredients we get are not likely to conform to any set of specifications. Some are free-flowing and others require banging on the bin. Sometimes they are neatly pelleted, and other times they come in unyielding chunks. Some light material wafts off to the dust collector, and the equivalent of a scalper sets aside the strictly foreign material.

This department, we hope, will not attract much tramp iron, or become too chaffy, but we expect to include in it material that does not readily lend itself to normal news mill processing.

Also, it can be a home for news we sometimes run into that could be described as being in the "awkward age." By this we mean it is in the predicament of a fellow who said at a friendly party that he was too old to pat and too young to pinch.

The shape of a story may be enticing, but for the time being it may be out of reach or protectively girdled in some way that resists news pinching. It is acceptable, however, to venture a glance at the item while attempting to become more familiar.

**Also, a jab in the ribs and a comment to the next fellow may be appropriate. We expect to meter in a fair amount of comment and opinion, not only on this type of a story but on other matters as well—in a neighborly sort of way.**

We'll start out with an item that has had considerable currency but which may not have reached everyone as yet. Preliminary plans are reported to be under way for an egg production operation in an eastern state which would involve one million layers at one location under management of one owner. It would take only about 300 such producers to provide all the eggs needed in the U.S. at the current rate of consumption.

A new spurt of interest in enzymes for feed resulted from the reports presented at the Iowa Cattle Feeders Day, and there are indications that a great deal more is to be heard about this development. Additional suppliers of enzymes are planning to produce and market products specifically for the feed industry, and research in the field will be stepped up.

An executive of one of the large farm equipment manufacturing firms predicted the other day that baled hay will be a thing of the past in 10 years. He was referring to new machinery for "waferizing" or otherwise putting hay into forms more convenient to handle. More equipment of this type is on the drawing boards or being researched, he indicated.

**Will the feed industry adapt its products and services to this and similar trends in farming methods? Watch this space 10 years from now (and at intervals in between) for the answer.**

(Turn to **TOP OF THE HOPPER**, page 101)

## How's Business?

AN EVERY WEEK REVIEW OF FORMULA FEED BUSINESS VOLUME, INCLUDING PRICE, SUPPLY AND DEMAND TRENDS

**Formula feed sales are showing a seasonal increase this spring, but there is some pessimism noted in reports from areas where volume is not up to expectations. The southwest and south central areas are not getting chick starter feed demand hoped for, and this has kept the feed business rather featureless in these areas. Prices for eggs are still depressed and other poultry prices are not favorable. Meanwhile, feed prices have been advancing. Corn has increased in price by 10¢ bu. in the past month. This has been cutting demand for complete feeds, but the sale of concentrates has been good. The climbing feed grain index reached 70 on April 7, according to the U.S. Department of Agriculture. This is more than 5 points higher than the 64.9 quoted a month earlier. The feedstuffs price index April 7 was 89.1, compared with 88.2 a week earlier and 88.3 a month earlier. (Ingredient prices in detail on pages 102-104.)**

### Northwest

Feed demand was off slightly this week from a week ago but was still rated as good by feed mill representatives of the area. Most mills reported demand equal or almost equal to the previous week.

It is believed that one reason for the slightly slower business is the spring work now confronting farmers. Some areas, however, are still rather wet and others, particularly in central Minnesota, are so dry that farmers would like a little moisture in the ground before moving into the field.

Also pointed to is the conclusion that feeders are still operating hand to mouth, waiting for better ratios.

Hog prices have shown a seasonal improvement and these are reflected in excellent demand for pig starter and hog feeds. Eggs, however, are still at depressed prices. Egg concentrates are selling well, and chick starters, while doing well, do not appear to be as strong as at first expected. Mills reporting general increases in business this spring over the same period of a year ago report that the starter business may be better than a year earlier, but the increase is not equal, percentagewise, to other feeds.

Concentrates are setting the pace this spring because of the low ratios and the climbing price for corn.

Mills are running a five-day week and most of them are putting in some overtime.

Prices for the coming week will be unchanged to up slightly.

### Southwest

Formula feed business in the Southwest continues to be in the doldrums. Mills reporting even a slight pick-up in business from last week are outnumbered by mills that find it slower. Running time ranges from 4 to 6 days, with the average around five days, but a "skimpy" five, meaning the same amount of feed could probably be pushed out in four days if the pressure were on.

This pressure is very definitely lacking. The lack of any big volume of chick starter sales could be one of the reasons for business being slower than many expect it to be. Low egg prices and cold weather have discouraged countless growers who have in turn cancelled chick orders. Low broiler prices are also not conducive to a good feeling in that market. And expected low turkey prices are causing pessimism there. Turkey poult demand has been quite slow for the early months, hatcheries report. A report is circulating in the industry that at least one turkey hatchery has been drowning early poults because of lack of demand.

Pig starters and swine growing feeds seem to be leading lines. Otherwise, the business has very little feature.

There is speculation that the pessimism noted in the industry at present may be due to excessive expectations, too early. Weather has not been helping. The nice days that come along find farmers trying to plant feed grain crops while they can, rather than going to town for feed. Completion of that task along with sustained spring weather may bring an upturn, it is felt. The sharp advances in feed prices the last couple of weeks also may have had a negative effect on business.

Price lists for next week will show some prices unchanged, some up $1 and some down as much as $2, the latter primarily those feeds high in millfeed.

### Northeast

Increased demand for poultry feeds boosted sales and one trade spokesman said "the outlook is better all around."

Heavier turnover in starting, growing and turkey feeds accounted for the rise, with egg mashes still providing the bulk of tonnage. Dairy feeds continued to hold on.

End products, however, remained at depressed levels, with broiler prices about steady to a shade lower. Eggs were weak, with prices in the western New York area quoted at 46@48¢ doz. for the extra large size. Milk held about steady.

Corn again featured the ingredient market with a rise of 3½ to 4¢ on light receipts and active export demand. Oats were up 1¢ and barley and feed wheat held unchanged.

Animal tallow eased ⅛¢ to 7⅝¢ lb.

Linseed oil meal rose $1 on nearby deliveries (within 10 days) but deferred shipments were off $10 on flaxseed allocations for processing. Soybean oil meal, both 44% and 50%, was down 50¢ to $1. Gluten meal and cottonseed oil meal held steady.

Meat scraps were unchanged but the market had a little stronger undertone. Fish meal was steady.

Hominy advanced $2 in sympathy with corn. Gluten feed, distillers' grains and alfalfa meal held steady. Brewers' grains were about unchanged.

Bran and middlings gave ground under lack of demand despite reduced flour mill output. Red dog was strong on good demand from the South.

Running time of formula feed manufacturers averaged 40 hours last week.

### Southeast

Feed manufacturers continue to complain about the dairy feed business, which remains on the slow side. Broiler feed business continues to improve slightly each week.

The north Georgia broiler market is unchanged at 16¢ lb. f.o.b. the farms. Slightly better prices were paid on the Gainesville auction, which still makes the present sales realize no profits.

(Turn to **MARKETS**, page 107)

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## Orderly Hike in Hog Output Seen By Economist

URBANA, ILL.—The quarterly pig crop report issued in March "indicates that farmers are increasing hog production in a desirable and orderly manner," according to L. H. Simerl, agricultural economist at the University of Illinois.

Writing in the Illinois Farmers' Outlook Letter, Mr. Simerl said the report shows increases in numbers ahead, but indicates that hog prices next fall and winter are likely to make some money for low-cost producers.

"Prices ranged mostly between $15 and $19 last fall and winter and averaged about $17," he said. "Corresponding prices for next fall and winter seem likely to be about $3 lower. Such prices should make some money for low-cost producers, and hog production might increase a little again in the spring of 1960. But guaranteed prices for corn vs. none for hogs will tend to prevent an excessive increase in hog production."

The March 1 report, he said, shows that farmers in nine leading states had 11,906,000 hogs three to six months old. This is 15% more than they had a year earlier, but it is considerably less than the 22% increase over the year before figure reported last December.

Looking at the April to June market outlook, he said marketings will shrink at least as much as usual during this period, but will total some 14 to 18% more than in the like period of 1958. Prices should work up to $18 or $19, or about halfway between the recent winter low and the 1958 summer high, Mr. Simerl said.

Also shown in the report was a total of 12,947,000 head of spring pigs already on the ground by March 1. Included in this grouping were all pigs born after Dec. 1, but more than half of them probably were February pigs, he said.

The number of spring pigs saved in the winter quarter was only 11% larger than was saved the year be-

(Turn to HOG OUTPUT, page 101)

## Expand Exemptions Under Wage Law

WASHINGTON — Clarence T. Lundquist, wage and hour administrator in the U.S. Department of Labor, has announced the expansion of the application of exemptions of grain and rice storage operations from overtime pay provisions of the Fair Labor Standards Act.

Under this amendment to the existing law, the exemption will apply not only to grain bulk storage in conventional type elevators but will also be applicable to flat warehouses storing grain.

This same amendment broadens the basic exemption from overtime pay provisions to include drying and storing of rough southern rice and also includes drying of grain prior to storage in this broadened provision.

The Fair Labor Standards Act has provided that employees in the grain and rice storage industry—which are seasonal in nature—were exempt from the overtime pay provisions of the law for not more than 14 weeks in any calendar year — except for hours worked over 12 per day or 56 per week, whichever was the greater.

This exemption heretofore has not applied to flat warehousing operations of grain or rough southern rice nor the drying operations in storing those commodities.

This particular action has been the objective of Al Oliver of the Grain & Feed Dealers National Assn., who persuaded the wage and hour division to correct the ambiguity of the act as it existed previously.

**SCHOLARSHIP GRANT—Dr. Frank Crane (right), chairman of the scholarsh'p fund of the Northwest Feed Manufacturers Assn., is shown presenting a check for $1,800 to Dr. A. A. Dowell, director of resident instruction in the College of Agriculture at the University of Minnesota. The money will provide six scholarships in animal, poultry and dairy husbandry during the coming school year. The check brought the amount given by the association to fellowships and scholarships during the past 12 years to $26,100.**

## Northwest Feed Assn. Provides $1,800 for 6 More Scholarships

MINNEAPOLIS — The Northwest Feed Manufacturers Assn., sponsor of fellowships and scholarships at the University of Minnesota since 1947, turned over $1,800 to the University April 6 to pay for six more scholarships during 1959-60 school year.

A check for the amount was turned over to Dr. A. A. Dowell, director of resident instruction and assistant dean of the College of Agriculture, Forestry and Home Economics, by Dr. Frank Crane, Land O'Lakes, Inc., Minneapolis, chairman of the association's scholarship committee.

The money will be used to further the education of six students in animal, dairy and poultry husbandry. A grant of $300 is given to each of six students each year.

With the $1,800 presented this week, the association has now given the university $26,100 over the past 12 years. From 1947 to 1956, the association provided nine fellowship grants of $2,000 each to be used for animal and poultry husbandry research.

In 1956, the program was changed to provide the six scholarships annually. A total of 24 scholarships have been given.

In addition to these, the association has provided $900 in annual scholarships of $300 each to an outstanding student in agricultural journalism. This grant, known as the Harvey E. Yantis Memorial Scholarship, is in memory of the former editor of Feedstuffs, who died in 1957. He had also served the association as president.

Scholarship winners for the 1958-59 school year were guests at the meeting. They were introduced by Dr. Keith McFarland, assistant director of resident instruction at the University of Minnesota.

Main speaker of the meeting was Ralph Van Hoven, St. Paul renderer, who spoke on his trip to Japan last summer as a representative for the U.S. animal fats industry at the trade fair in Osaka, Japan.

### FIRE STRIKES G.L.F.

POTSDAM, N.Y.—Fire broke out here recently in the G.L.F. building on Pine St., but was held to only $5 000 damages by local firemen. The blaze, believed to have been caused by overheated machinery, was kept confined to the elevator shaft. Damage was mostly water damage to feed.

## Pfizer Announces Additive Combination Cleared for Cattle

NEW YORK—Use of a combination of tranquilizer, antibiotic and hormone in cattle feeds has now been cleared, according to an announcement this week from Chas. Pfizer & Co., Inc.

"The approved use of Tran-Q, plus Terramycin, plus stilbestrol means a significant advance in ruminant nutrition," the feed supplement manufacturer says.

Pfizer scientists said the new three-way combination "has given superior results in both gain and increased feed conversion in beef cattle trials conducted commercially and in research by land grant colleges and universities."

Benefits from use of the three materials are additive, according to Dr. Herbert G. Luther, director of agricultural research and development for Pfizer. "Effects of feeding the combination of Tran-Q, Terramycin and stilbestrol have been thoroughly checked under field conditions," he said, "and apparently their modes of action that resulted in increased gain and feed conversion are independent of each other.

"Early tests showed that using Terramycin and stilbestrol in combination resulted in an average 15% increase in weight gain, and feed efficiency was improved 13%. By adding still a third ingredient—Tran-Q—steer gains increased an additional 8%, making total weight gains 23% above those of animals fed without the combination additive. Feed conversion was increased another 7%."

Company spokesmen said some researchers have reported even better results with the combination.

It was noted that Tran-Q is currently available to the feed industry as a premix containing 1 gm. hydroxyzine hydrochloride per pound. A supplemental new drug application is required by the manufacturer.

Pfizer said the new combination will not change the recommended feeding levels of any of the additives. The tranquilizer is fed at 2.5 mg. per head per day.

## Des Moines Club's Field Day May 25

DES MOINES—The Des Moines Feed & Grain Club's annual Field Day has been scheduled for May 25 at the Des Moines Golf & Country Club, according to Robert E. Sargent, Sargent Grain Co., general chairman.

The stag affair will include golf, refreshments, cards, games and other entertainment. The club will have its Hospitality Room at the Kirkwood Hotel open the evening of May 24.

## Wind Damages Mill

PARIS, ARK.—The J & M Feed Mill here has been damaged extensively by winds of tornadic force. Bill Jenkins and Bob Mantooth, owners, estimated their damage "in the neighborhood of $60,000." They said they plan to rebuild. A large concrete block and sheet iron building housing the milling equipment was destroyed, and the equipment was damaged heavily. Heavy rain following the tornado destroyed a large quantity of feed.

### FRANK RABB HOSPITALIZED

MINNEAPOLIS—Frank Rabb, 58, former owner of the Flambeau Milling Co., Phillips, Wis., and for the past several years a partner in Heywood & Rabb, Chattanooga, Tenn., is in serious condition in Methodist Hospital here following a stroke. He was stricken April 4 while visiting at the home of Don Ryan, Ryan Feed & Grain, Minneapolis. Mr. Rabb recently had left Chattanooga to make his home in Minneapolis.

## Study Complaint on Poultry Treatment

TRENTON, N.J. — Phillip Alampi, New Jersey secretary of agriculture, reported this week that the state is now in the process of developing recommendations which, it is hoped, will avoid future complaints against lay poultry servicemen by the state's board of veterinary medical examiners, such as the one now pending.

Mr. Alampi said representatives of groups concerned with the problem will meet in his office April 21 to discuss possible solutions. Suggestions, he said, will come from the poultry disease advisory committee of the State Department of Agriculture, the executive board of the state veterinary association, poultry associations and special committees made up of feed men, medication and vaccine suppliers, servicemen and representatives of the State Department of Agriculture and the state college.

Mr. Alampi said it is his understanding that the legal proceeding instituted by the board of veterinary medical examiners against James P. Cameron, Englishtown, on a charge of illegal practice of veterinary medicine, is being held in a pending status until the various groups come up with their joint recommendations.

It was alleged by a poultry producer that chickens diagnosed and treated by Mr. Cameron were harmed by the treatment. Mr. Cameron, who reportedly acknowledged that he is not a licensed veterinarian, pleaded innocent and is contesting the charge.

Mr. Alampi said the charge, which questions the legality of a layman servicing poultry flocks, represents a serious problem. He said that if the letter of the state's current veterinary medicine practice law were followed, county agents, vocational agriculture teachers and state college people posting poultry and advising disease treatment could be held in violation, along with servicemen for feed firms who service poultry flocks.

## C. W. Schultz Named By A. E. Staley Co.

DECATUR, ILL.—C. W. Schultz, formerly of Fahnestock & Co., Chicago, has been named to head Chicago Board of Trade operations for the A. E. Staley Manufacturing Co., Decatur, Ill., corn and soybean processor.

**C. W. Schultz**

Announcement of Mr. Schultz' appointment was made by E. K. Scheiter, president of Staley, who said the growth in volume of Staley's grain, oil and meal trading made it feasible to open a company operation in Chicago. The office will open May 1 in the Chicago Board of Trade Building.

Mr. Schultz has been a member of the Chicago Board of Trade since January, 1956. A 1950 graduate of the University of Illinois, he was with the Uhlmann Grain Co. for five years, serving as that company's branch manager in Springfield, Ill., before moving to Chicago.

## Pellet Mill Installed

KALISPELL, MONT.—The Kalispell Feed & Grain Supply, Inc., is operating a custom pellet feed mill. Mill machinery was installed at a cost of $30,000, according to James Gustin, mill manager.

Increased feeding programs for hogs and cattle in the Flathead Valley have developed a market for custom pellet work, Mr. Gustin said. Under the system, a feeder can use his own grains with molasses, trace minerals and vitamins added. This is then processed into pellet form.

# Ray Bowden to Join Texas Association

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON — Ray Bowden, former executive vice president of the big grass roots grain trade organization, the Grain & Feed Dealers National Assn., has reluctantly foresaken his decision to retire, and beginning July 1 will become secretary of the Texas Grain & Feed Dealers Assn.

Mr. Bowden gives up the comfort of his carpet slippers and his avocation of making cabinets and other homely appurtenances, of which he is an expert artisan, to return to the fray of the grain trade. This item says it is a reluctant return to the fray, but like an old fire horse in a comfortable pasture, Ray could not forego the old environment of an industry of which he has become an almost indispensable, integral part.

This information must arouse interest, surprise and undoubted enthusiasm, knowing that Ray has again moved into the secretaries' circles, of which he has been more or less the founding father.

## CANADIAN

(Continued from page 1)

tion Act provides for the announcement of support prices on an annual basis. Existing support price for hogs expires at the end of March. Therefore, I am now announcing that the existing price of $25 per 100 lb., basis Toronto and Montreal, warm dressed weight, for A grade carcasses, with appropriate prices for other markets, will continue in effect until Sept. 30. For the period from Oct. 1, 1959, to March 31, 1960, the support prices will be the mandatory level, which is 80% of the 10-year average or $23.65 per 100 lb., basis Toronto and Montreal.

"As is well known," he said, "hog marketings in 1958 and 1959 to date have been running at unusually high levels. This has resulted in hog prices over the past six months remaining at or close to the support level. It has also resulted in a considerable accumulation of pork products by the stabilization board.

"There is good reason to believe that one of the important factors behind the increased production of hogs is the development of so-called vertical integration, financed or sponsored in one way or another by large commercial organizations.

"The assured price under the existing stabilization program appears to have been an important factor in the greatly accelerated production under this type of operation. I have, therefore, directed the stabilization board and the officers of the department to actively explore the method of providing price support for hogs by means of a payment to producers, commonly described as a deficiency payment, rather than by an undertaking to purchase product. Under this alternative method, the price of hogs would not be supported in the market but producers would be paid the difference between the actual average price and the prescribed support price.

"This method would make possible to withhold payments from commercial organizations operating under the so-called vertical integration plan and to limit payments to any individual to a specific number of hogs delivered."

Mr. Harkness continued, "I am sure that all who have knowledge of hog production and marketing procedures will agree, that before radical changes are made, an administratively sound plan must be developed. Consequently, I cannot at this moment state where the proposed change can be put into effect."

# New Hampshire Plan For Assessing Poultry Feed Wins Approval

DURHAM, N.H. — Despite opposition from feed interests, the New Hampshire Poultry Growers Assn. voted at its annual spring meeting here to support the newly-organized New England Egg Producers Assn. program under which a fund will be collected through an assessment of 1¢ on each bag of feed against all New Hampshire egg producers.

The money raised in this manner will be used to promote the sale of New England quality eggs through the new association's program and for donations to the going program of the Poultry & Egg National Board in New England.

When Harold Glover, Alton, a market egg producer, sponsored the resolution favoring the feed assessment, a protest was immediately voiced by feed dealers who are members of the New Hampshire Poultry Growers Assn. In a show of hands, the feed dealers were counted, and this resulted in a resentment from some of the other members, but Robert Hosburgh, Fremont, president of the association, ruled that any member of the organization could vote on the issue.

The majority of the members gave a go-ahead signal for a study to be made on just how the penny could be collected on each bag of feed legally and as painlessly as possible. However, the feed men insisted it would be illegal, that bookkeeping at feed establishments might be seriously burdened, and that there should be other ways to raise the egg promotion fund.

Prior to the adoption of the resolution, Charles Shelnut, assistant commissioner of agriculture in Massachusetts and president of the new New England Producers' Assn., had told the New Hampshire poultrymen that the 1¢ per bag of grain assessment might raise more than $200,000 a year for egg promotion activities in New England.

# *Feeder to Speak At Purdue Event*

LAFAYETTE, IND.—One of the West's largest cattle feeders, W. D. Farr, Greeley, Colo., will discuss the future of the industry at the Indiana Cattle Feeders Day, April 24, at Purdue University.

Mr. Farr, vice president, Farr Farms Co., feeds 10,000-20 000 cattle annually. The company owns the cattle fed in a long-time family enterprise. It also maintains a feed mixing mill on the ranch.

He will discuss "Future Developments in Cattle Feeding" on a program beginning at 1 p.m. in the livestock judging pavilion on the Purdue campus.

Three Purdue staff members will participate in the afternoon program of which Wendell Morton, Lebanon, vice president, Indiana Cattle Feeders Assn., will be chairman. They are Prof. Henry H. Mayo, animal scientist, who will discuss "Utilization of Pasture in Fattening Cattle"; Dr. R. C. Dobson, entomologist, who will talk about "The Future of Systemic Insecticides for Beef Cattle," and Prof. J. Carroll Bottum, agricultural economist, who will tell "What's Ahead for the Cattleman."

The morning program, starting at 9 o'clock, will be in the Purdue livestock research barn, three miles north of the campus or one mile north of Bypass 52 on County Farm Road.

Visitors will see some of the feeding experiments carried on at Purdue with feeder cattle. Purdue animal scientists will report on these experiments in a program starting at 10 a.m.

The annual event is sponsored by Purdue's animal science department and the Indiana Cattle Feeders Assn.

**PRODUCTION SCHOOL BOARD—Members of the board of directors of the recently formed Feed Production School, Inc., which will sponsor the annual Feed Production School in Kansas City, are pictured here. Left to right are Fred Darragh, Jr., Darragh Co., Little Rock, Ark.; Ray Ammon, the Quaker Oats Co., St. Joseph, Mo.; Maurice Johnson, Staley Milling Co., Kansas City; Larry Alley, Pay Way Feed Mills, Kansas City; Lloyd Larson, Midwest Feed Manufacturers Assn., Kansas City, and Kenneth Grissinger, Kansas City attorney. Elected officers were Mr. Larson, president; Mr. Alley, vice president; Mr. Grissinger, secretary, and Mr. Darragh, treasurer.**

## PRODUCTION SCHOOL

(Continued from page 1)

are Fred Darragh, Jr., Darragh Co., Little Rock, Ark., chairman; Larry Alley, Pay Way Feed Mills, Kansas City, vice chairman, and Kenneth I. Grissinger, Kansas City attorney, secretary.

Under the by-laws, trustees will meet once a year to elect their officers, elect the board of directors and approve the budget. The executive body of the corporation will be the board of directors, which will obtain its members, with the exception of a secretary, from the board of trustees.

The board of directors currently consists of the original incorporators —Mr. Alley; Mr. Darragh; Ray Ammon, the Quaker Oats Co., St. Joseph, Mo.; Maurice Johnson, Staley Milling Co., Kansas City, and Lloyd Larson of the Midwest Feed Manufacturers Assn., Kansas City—plus Mr. Grissinger, who is serving as legal counsel.

This group has elected the following officers: Mr. Larson, president; Mr. Alley, vice president; Mr. Grissinger, secretary, and Mr. Darragh, treasurer.

The seminar on pelleting held in Kansas City in March provided the production school committee with specific subject matter for the 1959 school in September. Plans for seminars on compounding and mixing—subjects for the 1960 and 1961 schools —have been under way for some time.

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# *Production School Trustees*

Twenty-eight persons have been appointed to the board of trustees of Feed Production School, Inc., which will sponsor the annual Feed Production School in Kansas City. The trustees are:

**Larry Alley**, vice president, Pay Way Feed Mills, Kansas City.

**Harold Alsted**, vice president, Sprout, Waldron & Co., Inc., Muncy, Pa., and president of the Grain Processing Machinery Manufacturers Assn.

**Ray Ammon**, head, feed division, the Quaker Oats Co., St. Joseph, Mo.

**Ralph Beermann**, president, Beermann Bros. Dehy, Dakota City, Neb.

**Fred Darragh, Jr.**, president, Darragh Co., Little Rock, Ark.

**Earl Deacon**, vice president, B&D Mills, Grapevine, Texas.

**B. D. Eddie**, president, Superior Feed Mills, Oklahoma City.

**Fred W. Hoover, Jr.**, president, Albers Milling Co., Los Angeles.

**C. N. Hultberg**, vice president, California Pellet Mill Co., Crawfordsville, Ind.

**Vernon Hayes**, president, Hayes & Stolz Industrial Mfg. Co., Ft. Worth.

**R. D. Jackson**, president, Jackson Grain Co., Tampa, Fla.

**Lawrence Jensen**, partner, Golden Sun Milling Co., Estherville, Iowa.

**Maurice Johnson**, vice president, Staley Milling Co., Kansas City.

**Lloyd Larson**, executive vice president, Midwest Feed Manufacturers Assn., Kansas City.

**A. J. Macfarlane**, sales manager, Fisher Flouring Mills Co., Seattle.

**Robert McLeod**, president, Wirthmore Feeds, Waltham, Mass.

**James C. North**, president, Nutrena Mills, Inc., Minneapolis.

**D. E. Roddis**, president, Roddis Feed Co., Rochester, Minn.

**Dr. John Shellenberger**, head, flour and feed milling industries department, Kansas State College, Manhattan.

**J. W. Sloan**, vice president, Cosby-Hodges Milling Co., Birmingham, Ala.

**Oak Smith**, director, market research, Wenger Mixer Mfg. Co., Kansas City.

**T. E. Stivers**, president, T. E. Stivers Co., Decatur, Ga.

**J. D. Sykes**, vice president, Ralston Purina Co., St. Louis.

**John P. Snyder, Jr.**, vice president, the Pillsbury Co., Minneapolis.

**Erwin Wascher**, vice president, Honeggers' & Co., Fairbury, Ill.

**Ed Williams**, sales manager, Butler Mfg. Co., Kansas City.

**Raymond J. Walter**, executive secretary, Grain Processing Machinery Manufacturers Assn., New York.

**Elmer Winterscheidt**, president, Winterscheidt Milling Co., Seneca, Kansas.

# *U. R. Fishel Dies*

HOPE, IND.—U. R. (Bob) Fishel, Jr., manager of Fishel Products Co., Hope, Ind., died April 5 after an illness of several months at his home in Hope.

Mr. Fishel was a breeder and trainer of dogs, an American Kennel Club and Field Trial judge and owner of Fishel Kennels at Hope, established by his father in 1885.

Survivors include his wife, his mother and a brother, Edward B. Fishel, Fishel Products Co., Kingsburg, Cal.

**TALKING OVER TURKEY PROBLEMS—More than 200 turkey raisers, pathologists and nutritionists from central states attended the Yieldmor Turkey Management & Disease Control Clinic held recently by Yieldmor Feeds, Inc., Piqua, Ohio. Caught "talking turkey" by the cameraman in this photo are (left to right): George C. Gibson, general manager, Yieldmor Feeds; Dr. Harry E. Goldstein, in charge of the diagnostic laboratory, Reynoldsburg, Ohio; Dr. A. R. Winter, chairman, poultry department, Ohio State University, Columbus; Dwight E. Lifer, Danville, Ohio, director, National Turkey Assn.; Dr. H. G. Geyer, chief, division of animal husbandry, Ohio State University, and Ira Swank, Rossburg, Ohio, director of the National Turkey Assn.**

## Feedstuffs Use Shows Increase Over Year Ago

WASHINGTON — Consumption of feedstuffs during February totaled 1.6 million tons, the U.S. Department of Agriculture reports. This is a gain of more than 80,000 tons over a year earlier.

February's consumption brought the total for the season, October-February, to 8.8 million tons, a gain of about 10% over the previous season. Exports were over twice as large as a year earlier, with soybean meal accounting for most of these. Imports were up slightly. They comprised mainly cottonseed, copra and fish meals and wheat millfeeds.

February oilseed meal consumption totaled nearly 980,000 tons, the report stated. This was 149,000 less than January, but 100,000 more than February, 1958. Disappearance of 730,000 tons of soybean meal and 202,000 tons of cottonseed meal during February brought total disappearance for October-February of these feedstuffs to nearly 3.8 million and 1.4 million tons, respectively. Disappearance of linseed, copra and peanut meals was off from both a month and a year earlier. Millfeed disappearance of nearly 2 million tons so far this season was only slightly below the same time a year earlier.

Alfalfa meal consumption of 78,200 tons in February was sharply lower than January disappearance but was a little ahead of a year earlier. Consumption of most other feedstuffs was little different from a month or year ago. (See table 1.)

## Chickasha Cotton Oil Lists Appointment

FORT WORTH—Don A. Volz has been named manager of the new poultry and egg market department of Chickasha Cotton Oil Co., Fort Worth, it was announced by Paul R. Ray, vice president.

Don A. Volz

Mr. Volz, egg division manager for Safeway Stores in Tulsa, Okla., will be responsible for procurement, packaging and sale of eggs, produced under the feeding programs of the company.

During the 12 years he was employed by Safeway Stores, Mr. Volz worked in packing and merchandising plants in Cheyenne, Wyo.; Kansas City, Mo.; Dallas, Texas, and Tulsa, Okla. Prior to that he owned and operated his own poultry dressing and egg business in Van Nuys, Cal.

Mr. Volz was born on a cattle ranch near Cheyenne and studied business management, bookkeeping and accounting at the Casper Business College, Casper, Wyo.

**TABLE 1. Feedstuffs: Production, stocks and total disappearance, February, 1959, and February, 1958**

(In tons, 000's omitted)

| Feedstuff | Stocks Feb. 1, 1959* | Stocks Feb. 1, 1958* | Production Feb., 1959 | Production Feb., 1958 | Total disappearance Feb., 1959† | Total disappearance Feb., 1958† | Stocks Feb. 28, 1959* | Stocks Feb. 28, 1958* |
|---|---|---|---|---|---|---|---|---|
| Oilseed meals: | | | | | | | | |
| Soybean | 68.2 | 78.7 | 800.0 | 628.1 | 780.5 | 633.4 | 87.7 | 73.4 |
| Cottonseed | 79.6 | 241.5 | 214.2 | 186.4 | 202.0 | 206.3 | 103.8 | 224.7 |
| Linseed | 7.1 | 50.7 | 30.5 | 36.4 | 33.8 | 44.2 | 4.3 | 43.3 |
| Copra | ... | 0.9 | 7.9 | 7.0 | 10.9 | 11.8 | ... | ... |
| Peanut | 2.5 | 2.1 | 5.8 | 3.7 | 5.5 | 4.3 | 2.8 | 1.5 |
| Total | 157.4 | 373.9 | 1,058.4 | 861.6 | 1,032.7 | 900.0 | 198.6 | 342.9 |
| Grain by-products: | | | | | | | | |
| Wheat millfeeds | ** | ** | 346.0 | 372.2 | 354.0 | 377.0 | ** | ** |
| Rice millfeeds | ** | ** | 17.0 | 15.5 | 17.0 | 15.5 | ** | ** |
| Gluten feed & meal | ** | ** | 78.8 | 82.2 | 78.8 | 82.2 | ** | ** |
| Dist. dried grains | 3.8 | 1.8 | 29.0 | 26.0 | 27.8 | 25.8 | 5.0 | 2.0 |
| Brew. dried grains | 2.9 | 2.6 | 14.9 | 16.4 | 15.8 | 15.8 | 2.0 | 3.2 |
| Total | 6.7 | 4.4 | 485.7 | 512.3 | 493.4 | 516.3 | 7.0 | 5.2 |
| Other feeds: | | | | | | | | |
| Fish meal | ** | ** | 2.8 | 2.4 | 17.8 | 13.1 | ** | ** |
| Alfalfa meal | 189.2 | 287.4 | 21.1 | 15.5 | 78.2 | 77.6 | 132.1 | 225.3 |
| Total feeds | 353.3 | 665.7 | 1,568.0 | 1,391.8 | 1,622.1 | 1,507.0 | 337.7 | 573.4 |

*Stocks at processing plants.
†Includes exports and domestic disappearance (partly estimated).
**Not available.

## AFMA Delegates Invited to Attend Chicago Spring Dance

CHICAGO — A spring dance for members of the Chicago Feed Club and persons attending the American Feed Manufacturers Assn. convention and their ladies will be held Saturday, May 9, at the Evanston (Ill.) Golf Club.

The announcement of the event was made by George E. Fuhr, club president, in a bulletin to members. Reservations are necessary and may be made by any club member prior to May 4.

Mr. Fuhr pointed out that the date of the dance has been set for the benefit of out-of-town members and guests attending the AFMA convention May 11-13 in Chicago. He urged all feed industry people, whether members of the Chicago Feed Club or not, who will be in the city at that time, to join with his group for the social affair.

There will be a cocktail hour at 6:30 p.m., dinner will be served at 7:30 p.m., and dancing will continue until 1 a.m. There will be door prizes for the ladies and table prizes.

Transportation to the Evanston Golf Club, described as "one of the most beautiful," is readily available from the loop, Mr. Fuhr pointed out. The club also has easy access from the new toll road. Those requiring hotel or motel accommodations can find them within a short distance.

Persons who wish to attend the dance may obtain reservation assistance by contacting Harry J. Rafferty, Hudson Pulp & Paper Corp., 327 S. LaSalle St., Chicago.

## Alfalfa Processors To Discuss Santoquin

FINDLAY, OHIO — Santoquin, the antioxidant approved recently as an additive to dehydrated forage crops for the preservation of carotene, will be discussed at a meeting of the Alfalfa Processors Assn. April 23 in the Elks Club here.

Dr. G. L. Romoser of Monsanto Chemical Co., manufacturer of Santoquin, will be the main speaker. Discussion planned for the meeting will center on methods of application, carotene retention in open storage and the nutritional advantages of using Santoquin. Another speaker, W. S. Thompson, specialist in charge of the Ohio Section of Feeds and Fertilizer, will outline the required feed tag information for products containing Santoquin.

The meeting is set for 5:30 p.m. Members may invite feed manufacturers as their guests, and other interested persons are also welcome to attend. Those who want reservations are asked to write to Joe Cousino, Erie Alfalfa Mills, Inc., P.O. Box 848, Erie, Mich.

## GMI Launches Egg Program in South

FOREST, MISS. — General Mills, Inc., has launched an extensive commercial egg program in east central Mississippi, according to Raymond Parrish, sales representative for this area.

About 25 growers have switched from broilers to pullets, he said. The laying hen farms are located in the Simpson county area, and the pullet farms are in the Newton and Neshoba county area.

The program has a goal of 250,000 laying hens within 12 months and 500,000 within 24 months, it was indicated. About 65,000 pullets 18 weeks old were imported from Arkansas to start the operation.

Each contract grower has either 3,000 or 6,000 birds, with 3,000 to the house.

Dr. R. A. Rasmussen Dr. M. W. Pasvogel

## Two Vice Presidents Elected by Peter Hand

CHICAGO—Election of Dr. Russell A. Rasmussen and Dr. Myron W. Pasvogel as vice presidents of the Peter Hand Foundation, Chicago, has been announced by Wiley Akins, vice president and general manager.

The Peter Hand Foundation supplies vitamin, antibiotic and hormone premixes to the feed industry. In addition to its offices, main plant and laboratories in Chicago, the firm now has a second plant in Dallas and maintains a research farm near Monticello, Wis.

Dr. Rasmussen, who has been the foundation's associate director of research for the past two years, has been promoted to vice president and director of research and nutrition for the firm's animal division.

Dr. Pasvogel, who will be joining the foundation on May 19 from his position as professor and director, department of poultry science, University of Arizona College of Agriculture, will be vice president and director of research and nutrition for Peter Hand's poultry division.

Dr. Rasmussen received his B.S. degree in agricultural chemistry at the University of Idaho, his M.S. in biochemistry and organic chemistry at Pennsylvania State University and his Ph.D. in animal nutrition at Cornell University. From 1938 to 1940 he was in animal research at the University of Missouri and then at Utah State University where he served as assistant professor of animal nutrition in charge of beef cattle, sheep and swine.

From 1942 to 1944 he was associate professor of animal husbandry on problems of swine, beef cattle and sheep nutrition at Michigan State University. He then served as director of the laboratory of animal nutrition for Hiram Walker, Inc., Peoria, Ill., for 12 years before joining Peter Hand in 1957.

Dr. Pasvogel received his B.S., M.S. and Ph.D. degrees in animal science at the University of Illinois. From 1936 to 1938 he was with the hatchery department of Swift & Co., Chicago, and then became manager of the poultry division of Dorvillee Farms, Barrington, Ill. In 1940 he returned to Swift and then spent four years in the Navy.

From 1946 to 1948 he served with the poultry department, Illinois Department of Agriculture, and then spent four years as an assistant in poultry science at the University of Illinois before joining International Minerals & Chemical Corp., Chicago, as nutritionist in its feed phosphate division. Since 1953 he has served as director, department of poultry science, University of Arizona.

Mr. Akins said Dr. Rasmussen and Dr. Pasvogel would participate in a broadened investigation of applications of various ingredients in animal and poultry diets. They will also be concerned with product improvement and an expanded customer service program.

**BILL BOWERS RECOVERING**

JOPLIN, MO.—Alton (Bill) Bowers, Marco Mills, Inc., is making a satisfactory recovery from a recent heart attack. He is now convalescing at his home, 2412 Pennsylvania Ave., Joplin.

# $60 Soybean Meal Seen for Balance Of This Crop Year

MINNEAPOLIS—Soybean oil meal prices of at least $60 Decatur for 44% protein and a premium of $7 to $10 for 50% protein during the remainder of the crop year were predicted this week by Louis Brewster, manager of operations control for the oilseed division of General Mills, Inc.

Writing the company's soybean oil meal market letter in the absence of the regular author, Fred Hafner, who is on government assignment in India, Mr. Brewster sees the following soybean meal market outlook in the remaining months of the crop year:

- Cash soybean prices between $2.15 and $2.20 bu. track country station.
- Oil prices between 9 and 9¼¢—assuming continuing heavy exports.
- Soybean oil meal prices of at least $60 ton, Decatur, for 44% and a premium of $7 to $10 for 50% protein.
- April-May-June crush continuing at record levels if demand, particularly for 50%, holds.
- Lower July - August - September crush due to plant shutdown for annual maintenance work.
- Due to plant shutdowns beginning in July, prices may hold fairly steady at around $60 and $67, Decatur, for 44% and 50%, respectively.

Statistics to date, Mr. Brewster said, strongly indicate that processors will have to purchase about 50 million bushels of beans from CCC. With this in view, it is a good bet, he said, that the bean cost to processors for the balance of the crop year will be pegged close to the loan level — national average $2.09 plus quality premiums and carrying charges from June 1.

For the first five months of this crop year the disappearance of soybean oil meal has been 20% to 25% greater than each of the past three crop years, Mr. Brewster pointed out. Even with record production, he said, stocks of meal have not become burdensome.

"February and March were reportedly just fair from the standpoint of feed business," he said. "April and May have historically been excellent months for the feed industry, particularly since the broiler industry has grown to its present status. Increased placements of broilers and turkeys and increased hog population from the large 1958 fall pig crop and prospective 1959 spring pig crop should soon make itself felt in the market place.

"According to reports, there is a lot of meal buying to be done for both April and May. Granted that there is substantial volume of meal to be sold for this period, the problem of delivery dates always comes into the picture because only so much meal can come out of the industry spout in one day," he said. "When nearby supplies of meal get short and demand grows day by day, premiums for the spot cash meal grow by leaps and bounds. Then, to stay on the right side of the supply problem, the buyer has to look farther ahead, and the price he pays reflects the nearby market to a great extent. Sometimes buyers are inclined to 'overstay the market' at a time like this."

### WISCONSIN MILLS SOLD

BLAIR, WIS.—Pirie Olson, Blair, has sold the Olson Feed Stores at Blair, Eleva and Whitehall. The Cooperative Oil & Produce Co., Whitehall, purchased the mills at Blair and at Whitehall, and the mill at Eleva was sold to the Beef River Farmers Union Cooperative, Strum.

Milton C. Bondus

Whitney MacMillan

## Ass't Vice Presidents Appointed by Cargill

MINNEAPOLIS — Appointment of Whitney MacMillan and Milton C. Bondus as assistant vice presidents in the grain division of Cargill, Inc., was announced by H. Robert Diercks, vice president and division head.

Mr. MacMillan is in charge of the company's barley and oats merchandising. Born in Minneapolis, he joined Cargill on a full-time basis in 1951 after working summers prior to graduation from Yale University. He has served in the firm's administrative and vegetable oil divisions, in copra operations both in San Francisco and the Philippines. He joined Cargill's grain division at Minneapolis three years ago.

Mr. Bondus has been general superintendent of Cargill's national network of grain elevators since 1954. He joined Cargill in 1935 as a trainee at the company's Superior, Wis., elevator. He was chief engineer for Cargill's wartime shipbuilding program at Savage, Minn., from 1942 to 1945, and worked also in the firm's feed and oil divisions.

## K. C. Feed Club Plans Spring Dinner Dance

KANSAS CITY—Invitations went out this week for the annual Spring Dinner Dance of the Kansas City Feed Club April 17, at the Blue Hills Country Club.

A cocktail hour will start at 6:30 p.m. followed by dinner at 7:30 p.m. A combination sea food dinner, a specialty at the Blue Hills Country Club, will be served. The ladies will receive corsages.

Playing for the dancers will be the Harlan Livingood-John Elliott Orchestra, which has been featured at several of the winter concerts in Kansas City of the Jazz Workshop.

Reservations may be made through Lyman D. Ketchum, Staley Milling Co., Kansas City 16, Mo., club treasurer.

## Feed Firm Files Suits Against Produce Firm

BIRMINGHAM, ALA. — Aubrey Feed Mills of Louisville has filed two suits in U.S. district court here. One, against City Produce Co., Inc., Guntersville, Ala., claims $391,270.22 for chicken feed. The other, against Harold Green, Huntsville, claims $91,041.44 for feed. The suit identifies Mr. Green as president of City Produce.

Aubrey alleges that the last check it received as payment for feed was returned because of insufficient funds. When Aubrey representatives went to Guntersville to check out the situation, it is stated, they found that a mortgage was being prepared on City Produce equipment to Ralston Purina Co. for $110,000.

Aubrey said in the suit that the Alabama firm told that it had about 900,000 broiler type chickens being fed only Aubrey Red A brand feed. The Kentucky firm asked for a judgment of the total amount it claims and setting aside of the mortgage to Ralston Purina.

Meanwhile, City Produce Co. has entered protests in court against appointment of a receiver as petitioned by Aubrey Feed Mills.

The court has authorized Aubrey to take depositions from Mr. Green and W. Harvey Self, Huntsville, accountant for City Produce.

## *Plans for Eastern Convention Set*

POCONO MANOR, PA.—Plans are set for the annual convention of the Eastern Federation of Feed Merchants, to be held here June 7-9, according to Richard Demarest, federation president. Room reservations are being accepted by Pocono Manor Inn, resort setting for the meeting.

A board of directors committee is arranging a program to help feed men keep up to date on what is going on within their industry, Mr. Demarest said.

For entertainment, two golf tournaments with prizes are being planned —one for the feedmen June 8, and one for their ladies June 9. The convention program will close with a banquet, followed by dancing, on the evening of June 9.

## *St. Joseph Club To Meet April 15*

ST. JOSEPH, MO.—The St. Joseph Feed, Seed, Grain & Fertilizer Club will hold a dinner meeting April 15 at Heinie's Restaurant. A short social hour starting at 6:15 p.m. will be followed by dinner.

The program, to begin at 8 p.m., will included selected recordings made by Dr. Joseph Burnside, an authority on hog production, according to Webb Embrey, club secretary. Also, Russell Wales will show movies made on his recent hunting trip to Africa.

### FIRM FILES APPEAL

AUBURN, MAINE — The Eastern States Farmers Exchange has appealed to the Auburn appeals board for authority to construct a pole-type aluminum-covered building. The appeal was filed when the building inspector refused to issue a permit because of zoning regulations in the area.

## *Higher Stilbestrol Level in Supplements Cleared by FDA*

INDIANAPOLIS — The Food and Drug Administration has given feed manufacturers clearance to add Stilbosol at new levels to provide up to 20 mg. of stilbestrol per pound of protein supplement, according to an announcement from Eli Lilly & Co. The highest level previously allowed was 10 mg. per pound of supplement.

According to G. L. Varnes, executive director of Lilly's agricultural and industrial products division, "the new provision will help feed manufacturers offer Stilbosol-containing supplements that more nearly fit the needs of feedlot operators." The high-level stilbestrol clearance will provide the recommended 10 mg. of stilbestrol daily per animal in as little as .5 lb. of supplement.

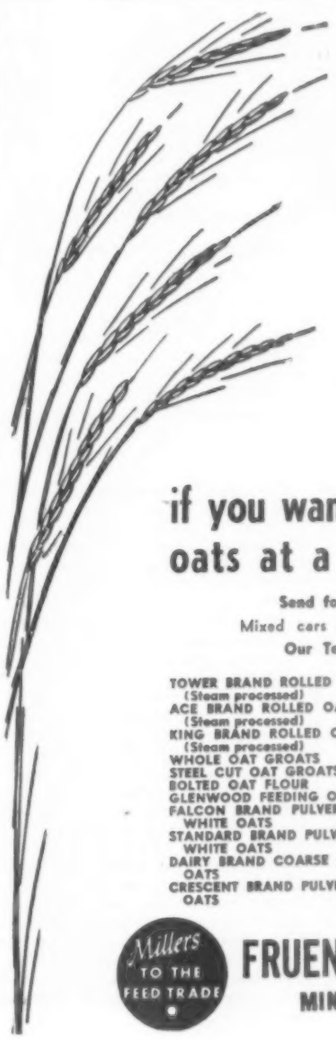
Two restrictions accompany the new concentrations, according to Mr. Varnes. First, supplements with more than 10 mg. of stilbestrol per pound must be mixed with grains or roughage before use. Second, the feed manufacturer must have assays completed on each batch of supplement containing over 10 mg. of stilbestrol per pound.

Previously feedlot operators and others wanting to use supplements containing more than 10 mg. of stilbestrol per pound were required to file applications. This requirement is no longer necessary for the new levels.

Stilbosol is Lilly's trade name for its diethylstilbestrol premix.

### RETIRED FEED MAN DIES

CHICHESTER, N.H.—Augustus W. Clark, retired proprietor of Clark's Blue Seal Grain Store here, died recently at Daytona Beach, Fla., where he had been vacationing.

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CRESCENT BRAND PULVERIZED OATS
CORN OATS PELLETS (Corn-Oats)
MIXERS' PULVERIZED OATS
MIXERS' COARSE GROUND WHITE OATS
MIXERS' PELLETED OATS
APEX BRAND CRIMPED WHITE OATS
OAT FEED
STEAM ROLLED WHOLE BARLEY
GROUND BARLEY
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**NEW PLANT—This $5 million flour and feed mill started operations recently in Puerto Rico as the first segment of a planned $175 million food processing and industrial "complex." The new facility shown is an affiliate of Nebraska Consolidated Mills, Omaha. A slaughterhouse and soybean extraction plant are now in the planning stages.**

## Nebraska Mills Head Describes New Milling Setup in Puerto Rico

NEW YORK — Puerto Rico will soon have a $175 million agricultural food processing and industrial "complex" which "other developing areas might well consider," according to J. Allan Mactier, president of the Nebraska Consolidated Mills Co., Omaha, Neb.

Speaking before a recent meeting of the American Management Assn., Mr. Mactier said the first segment of the Puerto Rico development has started operations in San Juan—a $5 million mill built by his company, which will turn out annually $25 million worth of flour, corn meal and animal feed for sale in Puerto Rico and Latin America.

With high-quality feed and flour processed locally for the first time, Puerto Rico's farmers will save $1,500,000 a year due to economies in shipping and handling, Mr. Mactier declared. "These savings will spark the growth of a Puerto Rican poultry, egg and baking industry which up to now was held back due to the high cost of bringing in imported feeds," he said.

The new flour and feed mill, Molinos de Puerto Rico, has an annual capacity of 250,000 tons. It will produce daily: 4,000 cwt. of flour; 12,000 cwt. of feed, and 13,000 cwt. in corn meal.

Mr. Mactier said his firm plans to reinvest profits earned in Puerto Rico in other business ventures in the island commonwealth.

Other units making up the proposed food processing complex will include a slaughter house and soybean oil extraction plant, the speaker noted.

The slaughterhouse will provide meat scraps to Molinos for processing into feed, and in turn Molinos will sell the slaughterhouse feed to fatten livestock.

"Based on these plans," Mr. Mactier said, "we expect to triple our Puerto Rican feed production within 10 years as both our operation and the slaughterhouse are expected to stimulate the growth of the local livestock industry to the point where Puerto Rico's meat production will have tripled to 60 million pounds a year.

"The soybean oil plant will sell soybean oil to local tuna fish packers, who in turn will sell Molinos fish scraps for feed production." He said also that the new feed mill will purchase sugar by-products, molasses and perhaps bagasse pith for use in feed.

## Oilseed Meal Futures Take Irregular Trend

MEMPHIS—Oilseed meal futures prices were irregular on the Memphis Board of Trade this week, compared with the previous week.

New season highs again were registered in three of the four old crop positions as speculative buying operations met little opposition.

Demand for the cash article was not quite as brisk as anticipated, although feed business generally was termed good, and at no time were offerings of oil meal in nearby positions burdensome.

A pit observer said that broiler placements continue to run at high levels, compared with last year. And, although the feeding ratio leaves something to be desired, there is still every reason, he added, to expect good consumption for formula feeds from this source.

Futures trading in oil meal slackened somewhat from the past few weeks, the market backing and filling within a $1.50 range of the season's high. One observer attributed this to a normal consolidation of recent gains.

Unrestricted soybean oil meal closed April 8 60¢ lower to 40¢ ton higher than on April 1. Eastern Trunk Line soybean oil meal was 25¢ lower to 50¢ higher, bulk solvent cottonseed oil meal unchanged to 50¢ higher, and sacked cottonseed oil meal unchanged.

## Kansas Reports Brisk Leasing of Bluestem

TOPEKA, KANSAS — Leasing of Bluestem pasture in the Flint Hills section of Kansas has been brisk this spring with 82% of the available acreage under lease by April 1, according to a report from the Kansas Crop and Livestock Reporting Service.

This compares with 67% under lease at this time a year ago and with the 10-year average (1948-57) of 81% leased by April 1.

The pasture outlook is reported to be generally favorable with adequate soil moisture to start growth of grass. Stockwater supplies are also reported to be adequate and current prospects point to an adequate supply for the entire grazing season.

"With increased numbers of cattle on Kansas farms and with generally favorable prospects for pastures, the total movement into the area will probably be slightly larger than a year ago," the report said.

Prospects for early grazing are reported to be good. The reported condition of Bluestem pastures April 1 was 91% of normal, down three points from a year earlier, but eight points better than the 10-year average.

Per head lease prices are slightly under a year ago for all cattle, the report said. They are considerably lower than the high points reached in 1952. Pasture leased on a per acre basis averaged $3.90 this year. This is 10¢ over a year ago, but 90¢ per acre under the all-time high of $4.80 paid in 1952.

## Cottonoil Sales Plans Outlined

WASHINGTON—A 22 million gallon hangover of cottonseed crude oil up for bid next week may be the tip-off of probable sales policy of the Commodity Stabilization Service for its more than 70 million pounds of refined CSO. U.S. Department of Agriculture officials confidently expect that its one big customer for crude CSO will pick up the remaining oil next week.

If that happens, as is now expected on the basis of previous eager buying by this foreign source, the following week USDA will move into the sales market for its stocks of refined oil, which currently amount to more than 60 million pounds.

As of this coming week, USDA officials reported they will accept any offer for all or part of the USDA stocks of CSO refined at 12.45¢ lb., but until the crude component is sold, they will not entertain any bids less than that upset price.

CSS officials are now strong, long holders of CSO. They have been informed by trade and speculative sources that CSO is now a valuable property. In fact, it is said CSS has a strong hold on refined CSO at this time. CSS officials frankly reported that they do not intend to sell CSO in their stocks at any bargain basement price. CSS now must be seen as little less than a strong long.

## Illinois Meeting Set For Grain Dealers

URBANA, ILL.—A Grain Dealers Management Conference has been scheduled for April 21-22 at the University of Illinois. It is being arranged and conducted by the university's department of agricultural economics in cooperation with the Illinois Grain Dealers Assn. and the Farmers Grain Dealers Assn.

The conference is being planned about the theme, "The Development of Elevator Space and Its Use." Much of the program will deal with vertical versus flat storage.

A registration fee of $10 will include a luncheon and dinner, but not other meals or housing. Additional information about the conference may be obtained by writing to Conference Supervisor, 116C Illini Hall, Champaign, Ill.

## Houston Meeting

HOUSTON — Future freeways in the city will be discussed when the Houston Feed Club holds its next meeting April 14. The noon luncheon will be held at the Ben Milam Hotel. Ralph Ellifrit, city planning director, will present the program.

## McMillen Feed Names Research Veterinarian

FORT WAYNE, IND. — The appointment of Dr. Eugene F. Nicks to the position of research veterinarian has been announced by McMillen Feed Mills, division of Central Soya Co., Fort Wayne, Ind.

**Dr. E. F. Nicks**

Dr. Nicks will be responsible to Dr. J. R. Allen, director of field service, at the McMillen feed research headquarters in Decatur.

He completed his pre-veterinary work at North Carolina State College in 1951 and received the D.V.M. degree at the University of Georgia in 1955.

Following a year of private practice, Dr. Nicks was employed by the U.S. Department of Agriculture as area supervisor, veterinary livestock inspector, in North Carolina.

**John H. Wessman**

## Joins Production School And Midwest Staff

KANSAS CITY — John H. Wessman has been appointed director of activities for Midwest Feed Manufacturers Assn. and Feed Production School, Inc., it was anounced this week by Maurice Johnson, Staley Milling Co., president of the Midwest association. Moving to Kansas City from Libertyville, Ill., Mr. Wessman will start his new duties April 15.

He will work with Lloyd S. Larson, who is executive vice president of the Midwest group and president of the new Feed Production School, Inc., which has taken over sponsorship of the annual Feed Production School in Kansas City. (Also see story on production school on page 1.)

A graduate of the school of agricultural engineering, Iowa State College, Mr. Wessman was with International Harvester Co. for 14 years. He joined International Harvester in 1941 and spent six months in a student executive training program before entering military service. In 1944 he returned to International, where he served in the consumer relations department. Among his assignments were assistant editor preparing farm tractor and machinery literature, member of farm practice research team, supervisor of farm tractor and machinery sales promotion and other special assignments.

Mr. Wessman has been a member of the American Society of Agricultural Engineers since 1941. With that group he was instrumental in establishing a committee on public relations and served as its chairman for three years. He is also a member of the Soil Conservation Society, and was a member of the American Association for the Advancement of Science from 1949 to 1954.

Mr. Wessman will assist in the Midwest handling of the production school program and will coordinate activities between the production school committee and the various research projects which are under way for the 1959 program Sept. 23-25 in Kansas City.

## Poultry Inspection

BIRMINGHAM, ALA.—The Jefferson County board of health has authorized Dr. George A. Denison, county health officer, to take any necessary action to stop the sale of "unwholesome" poultry products in the county. The authorization could lead to mandatory inspection of all poultry sold in Jefferson County.

Only two poultry dressing plants in the area are currently taking advantage of voluntary federal inspections. The federal government requires inspection of poultry shipped across state lines, but does not require intrastate shipments to be inspected.

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to 50¢ higher, and sacked cottonseed oil meal unchanged.

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area supervisor, veterinary livestock inspector, in North Carolina.

state lines, but does not require intrastate shipments to be inspected.

**VIRGINIA SPEAKERS—Kenneth Peterson (fourth from left), Rockingham (Va.) County agent, chats with the four poultry and agriculture experts who addressed the 10th annual Rockingham County extension poultry meeting recently in Harrisonburg, Va. They are (left to right): Taylor Grizzard, Virginia Poultry Federation; Hermon Miller, U.S. Department of Agriculture; T. R. Williams, Red Comb-Pioneer Mills, and G. E. Coleman, Jr., president of Nichols, Inc.**

## *Needed Changes in Poultry Industry Discussed in Virginia*

HARRISONBURG, VA.—Over 1,700 poultrymen gathered in Harrisonburg recently for the 10th annual Rockingham County extension poultry meeting. They were told that some changes are due in the industry if its future is to look brighter.

T. R. Williams, manager of merchandising and promotion for Red Comb-Pioneer Mills, urged a change in turkey marketing procedures and, in effect, a change in attitude among turkey industry people. "Beef, pork and broilers," he said, "are moving along much faster than the turkey industry."

As an industry-wide goal, he suggested putting a low-cost, high-quality product on everybody's dinner table. He speculated that the time may soon come when most producing firms will take the product from "ovum to oven."

Stressing the same theme of trying new and ultra-modern business methods for the poultry industry, G. E. Coleman, president of Nichols, Inc., said broiler growers are really searching for two things—a way to gear production to demand and a way to finance what he termed survival.

He rejected government and voluntary controls as the answer to industry problems, urging adoption of branded products, to be pushed in year-round selling campaigns tied in with frozen food methods as a possible goal.

"Compound the selling effort to push these brand names in the local markets with the national brand campaigns and you will have the kind of promotion that will make this industry of 2 billion birds a year into an industry of 4 billion birds a year," he declared.

He added that when frozen, the product will help bridge periods of over-production and concluded that "with a realistic price differential between the frozen and fresh product, with an ever increasing demand that will come from the combined meal—the pre-cooked ready-to-serve product—and brand-name selling to promote all products, a new era of growth development, and sensible control lies ahead for those who survive."

Another speaker, Taylor Grizzard of the Virginina Poultry Federation, suggested as a seven-point program: That poultrymen cooperate with one another; utilize large production units; awaken public interest and appreciation in the industry; develop confidence of lending agencies; increase research efforts; disseminate research results, and foster strong promotional and merchandising campaigns.

## Extension of Sorghum Support Loans Allowed

WASHINGTON—The U.S. Department of Agriculture has announced that farmers will be able to extend price-support loans on farm-stored, 1957-crop grain sorghums now under reseal for another 12-month period following the March 31, 1959, maturity date for these reseal loans.

Approximately 1,709,361 cwt. of farm-stored, 1957-crop grain sorghums are now resealed under extended price-support loans. Most of this quantity is stored in Nebraska. The extension of reseal on 1957-crop grain sorghum loans will be made available in areas determined by state Agricultural Stabilization and Conservation (ASC) committees. State ASC committees will consider feasibility of safe storage of grain sorghums on farms for another year, and storage needs for the coming price-support takeover of crops, in making a decision.

Broadening the USDA reseal program to include extension of 1957-crop grain sorghum loans is designed to help relieve the storage situation in specific areas. Previously, the USDA announced a reseal program on farm-stored 1958 crops of soybeans, barley, grain sorghums, oats, rye, corn, wheat, and flaxseed, and an extension of loans on 1957-crop barley, oats, corn and wheat, and on 1956-crop corn and wheat.

## Plant May Be Rebuilt

NORTH PLAINS, ORE.—Norman DeFrees, owner of a three-story feed mill destroyed by fire, has announced that he "very likely" will rebuild the plant. Total loss was estimated at $170 000. Still standing are two 40 by 100 ft. storage buildings, a 24 by 100 ft. office and retail store and two old frame buildings. Mr. DeFrees said he still didn't know how the blaze started.

## *Kent Feeds Invents '28-hour' Work Day*

MUSCATINE, IOWA—The payroll department of Kent Feeds, Inc., was perplexed recently when time cards totaling 28 hours in a day started coming in.

During the past winter, company officials pointed out, the firm's Muscatine plant wasn't always able to keep up with orders when operating three regular eight-hour shifts a day, six days a week. To solve this "happy problem," said production superintendent Bud Swick, one shift sometimes worked 12 hours. This, combined with two eight-hour shifts, resulted in the "28-hour work day."

Bud Swick

Currently, Mr. Swick said, the company is adding materially to production facilities in Muscatine. This will increase capacity a good deal, it was pointed out.

## Ingredient Firm Moves

DES PLAINES, ILL.—Bob White & Co., Des Plaines feed ingredient broker, recently moved to larger, more modern quarters across the street from the firm's previous location. The new address is 605 Lee St., Des Plaines, Ill. Phone numbers have not been changed.

### BAG FIRM OFFICIAL DIES

SALT LAKE CITY—Mrs. Rose Wagner, executive vice president and one of the founders of Wagner Bag Co., Inc., Salt Lake City, died of a stroke recently at the home of a daughter in Los Angeles. She and her husband, Harry Wagner, established the original Wagner Bag Co.

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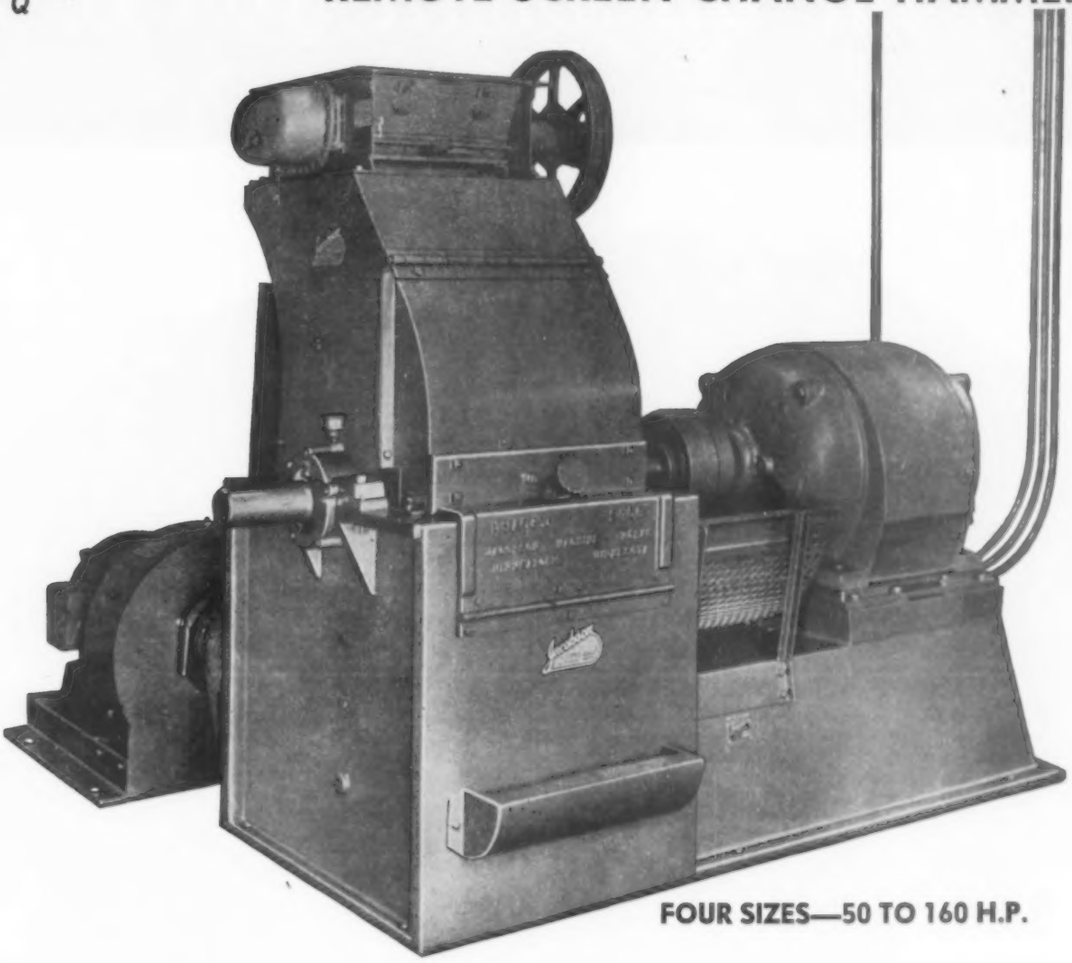

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1. Bird, H. R.: Coming Events in Poultry Nutrition. Hatchery & Feed, July, 1958.
2. McGinnis, J. et al.: Use-history of Antibiotics as Related to Their Efficacy in Promoting Growth of Turkeys. Poultry Science, in press.
3. Whitehair, C. K.: Medicated Swine Feeds. North Am. Vet. (Am. J. of Vet. Sci.) 39 (No. 2) (Feb. 1958): 32.

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## *Survey Conducted in South Covers Grower's Role in Broiler Financing*

A Southern Cooperative Series bulletin which reports a study of the grower phase of financing production and marketing of broilers in the South concludes that improvement of broiler financing contracts rests in: "(1) Equitable incentive contracts, (2) better risk-sharing agreements, (3) simplifying contracts and agreements and (4) developing more long-range, stable financing contracts enabling moderate production increases based on sound cost-price relationships."

Dr. Ewell P. Roy, assistant agricultural economist, Louisiana Agricultural Experiment Station, Baton Rouge, and Windsor P. Thomas, Jr., graduate assistant, list in their 1958 report these weaknesses in the South's credit structure: "(1) Failure of some contracts like 'flat fee' to provide enough incentives for efficiency in broiler growing, (2) inequality in sharing of certain risks between grower and dealer-supplier, (3) lack of standard and simplified models of different broiler credit plans, (4) lack of clarity in enumerating procedures to be followed in handling certain exigencies and (5) clarification of operating policy of dealer-supplier in prolonged periods of depressed broiler prices."

The authors noted that two previous studies on broiler financing in the South have appraised the extent and methods of financing broiler production by dealers and lending agencies.

Dr. Roy and Mr. Thomas reported that financing of broiler production, at the time of survey, 1951-56, was widespread and influenced many, if not most, of the management and marketing undertakings in the enterprise.

Broiler producers during the time of study were often only part-time attendants having more regular employment in both farm and non-farm enterprises. Farm ownership was high and family labor was employed almost exclusively. It was concluded, according to the report authors, that up to the point where family supplies are exhausted, it appears sound to utilize rather fully whatever labor is present, since labor requirements per 1,000 birds decrease rapidly as size of brood is increased from 1,000 birds to 10,000 or more birds.

"Growers required long-term credit for constructing broiler houses and buying equipment, although demand for this type of credit varied from state to state depending on the economic maturity of the broiler enterprise," the survey analyzers said. Building and equipment costs, they said, are such that financing plays a large role in determining how many broiler houses will be constructed and at what cost.

The trend in broiler house construction favored narrower houses, pole-type construction and dirt floors, with total floor space accommodating a minimum of 4,000-5,000 broilers per lot. Investment in equipment including brooders, feeders and waterers averaged close to $100 per 1,000 broilers started, not including automatic feeders.

The survey showed that growers employed at least five basic financing plans for short-term or operating credit. Although all basic plans were found to exist in each of the states studied — Arkansas, Georgia, Mississippi, South Carolina, Texas and Virginia—a trend was noted toward plans placing less price and income risk on the grower, although efficiency incentives were being incorporated rather widely in most financing plans. "This trend is accentuated when broiler prices fall to relatively low levels, since the dealer-creditor desires to protect himself from subsidizing inefficiency," the report said.

### Conception Contradicted

Growers using financing plans which placed relatively little economic risk on themselves reported having as favorable a net worth status as growers assuming more or all of the production risks. Dr. Roy and Mr. Thomas observed, "This contradicts the popular conception that broiler growers who use guarantee plans are in poor financial condition."

According to the survey, the grower's share in decision-making was directly correlated with the economic risks in the financing plan. In Virginia, growers assuming the least risk had the largest growing operations, while those on cash and other high-risk deals had the smallest operations. "Another point of view here," said the authors, "is that high-risk operations may also be high-profit enterprises, while low-risk enterprises are usually low unit-profit businesses that depend on large outputs for a satisfactory income."

Decisions regarding the marketing of broilers were made according to the type of financing plan—the degree of risk assumed by each grower in relation to the degree of risk assumed by each dealer-creditor.

The study indicated that 90% of the broilers grown in the South move directly to local processing plants, thereby minimizing transportation and shrinkage costs in lieu of locating dressing plants close to consuming centers and distant from concentrated growing areas.

Economic integration in processing and distributing broilers has led to contractual arrangements between dealers, processors and retailers,


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## SWINE CONFINEMENT GROWS IN GEORGIA

**ATHENS, GA.—Three years ago there were virtually no swine confinement feeding floors in Georgia. But in 1958, as was pointed out recently by P. A. Crawford, University of Georgia, it was estimated that there were at least 1,000 confinement units in the state.**

whereby birds are scheduled and moved directly from farm to plant to retail outlets.

Three reasons were cited as largely responsible for variations in production costs: (1) Efficiency variations in feed conversion, chick mortality and the like, (2) unit cost variations in acquiring feed, chicks and medicines and (3) variations in the "imputed" cost for family labor. "Any returns for family labor in excess of zero may be considered a worthwhile economic alternative for people who would otherwise be unemployed," commented the authors.

Despite greater efficiency by growers under high-risk plans, according to the study their returns per pound were about equal to returns to growers under plans with less risk. Dr. Roy and Mr. Thomas said this is not inconsistent economically, because the latter growers were part of an integrated system, whereby efficiency throughout this system became paramount compared with "more-or-less" efficiency at the "growing" level only, under a less-integrated system.

Southern Cooperative Series Bulletin No. 57 which contains the complete report of the grower's part in financing the South's production and marketing of broilers may be obtained from C. W. Upp, Director, Louisiana Agricultural Experiment Station, Baton Rouge, La., or from the stations in Alabama, Arkansas, Georgia, Mississippi, North Carolina, South Carolina, Tennessee, Texas, Virginia and Puerto Rico.

The studies reported by the bulletin were conducted with the cooperation of the U.S. Department of Agriculture and the Agricultural Experiment Stations of the states listed above.

## California Firm to Represent Dura-Buket

EAST ST. LOUIS, ILL.—California Mill Equipment Co., San Mateo, Cal., will be the manufacturer's representative for Dura-Buket in California, Arizona and Nevada. The firm will handle sales by setting up stocking and non-stocking distributors for the plastic elevator bucket manufactured by Dura-Buket division of National Oats Co., East St. Louis.

Announced at the same time were the appointments of two stocking distributors for the firm. C. K. Brown & Associates, Twin Falls, Idaho, and Ogden, Utah, will be stocking distributors for Idaho and Utah, and Specialty Machine Co., Inc., Cartersville, Ga., will be stocking distributor for the state of Georgia.

## New Appointment

MIDDLETOWN, OHIO—Raymond Bag Corp., Middletown, Ohio, has appointed Howard Lundeen as quality control supervisor at Richmond, Va. Mr. Lundeen was previously with the Pillsbury Co. at Hamilton, Ohio. Before that he was with Jones & Laughlin Steel Corp. He is a graduate of the University of Minnesota and is currently working on an M.S. degree at the University of Cincinnati.

## Little Gain in Alabama Feed Tonnage Reported

MONTGOMERY, ALA.—Feed tonnage sold in Alabama during the month of February showed little increase over the same month a year earlier, R. C. Bamberg, Alabama commissioner of agriculture, reports.

His report shows a tonnage of 94,597.17, as against 94,105.30 in February, 1958. Poultry tonnage showed a sharp increase, rising from 48,510 92 in February, 1958, to 58,830.73. Hog feeds also increased, moving up from 3,908.17 tons in 1958 to 5,633.31 this year.

All other feeds—horse and mule feed, dairy feed, oil meals, cereal byproducts, molasses and the category, "all other feeds"—showed a drop from February, 1958.

## *Baseball Night Planned For APHF Convention*

ST. LOUIS—It will be "hatchery industry" baseball night July 21 at Busch Stadium, St. Louis. The Chicago Cubs will play the St. Louis Cardinals the first night of the 43rd annual APHF American Poultry Congress & Exposition slated here July 21-23.

Arrangements are underway to make available tickets for APHF-convention folk. Ticket information will be made available in May.

The Milwaukee Braves are scheduled for a three-game series beginning July 17. There will be night games between the Braves and the Cards July 17 and 18 and a single contest on Sunday afternoon, July 19.

Monday, July 20, the Cubs arrive for the two-game series on the nights of July 20 and 21.

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# Are you wasting phosphorus with out-of-date feeding recommendations?

PRESENT-DAY recommendations on the levels of phosphorus to use in poultry and livestock feeds are not clearly defined. They have been based on many different phosphorus sources. And in many cases, the requirement differs with each type of phosphorus fed.

The difference between analytical reagent (non-hydrated) and USP (hydrated) grades of dicalcium phosphate clearly illustrates this point.

Both have been used in the past to determine phosphorus requirements. Yet research shows there is a great difference in the availabilities of these two products for different animals. The phosphorus requirement based on the reagent grade will be much higher for both chicks and turkeys.

For example, Beltsville White Turkey poults on a purified diet receiving .55%P of analytical reagent grade of dicalcium phosphate made poor gains and suffered 100% mortality at 3 weeks. Meanwhile, poults receiving the purified diet with .55% of USP grade dicalcium phosphate made an average weight gain of 268.9 grams at 3 weeks, with 100% livability.

This work shows that feeding recommendations based on the reagent grade of dicalcium phosphate . . . and other phosphate products of low availability . . . may be much higher than actually needed.

Even more important, the proven high availability of International's Dynamic DYNAFOS, a chemically processed dicalcium phosphate, makes many old recommendations out-of-date . . . and wasteful.

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***Dynamic DYNAFOS has been developed specifically for the feed industry. Proven high biological availability and low calcium content mean you can count on each pound of Dynamic DYNAFOS to deliver much more usable phosphorus.***

***Exacting quality and biological control tests enable International scientists to further improve the superior performance of Dynamic DYNAFOS.***

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5-59

# New Oregon Plant Makes Both Pelleted and Wafered Forage Products for Cattle and Sheep

By ROGER BERGLUND
Feedstuffs Managing Editor

When it comes to new forms of all-roughage or complete feeds for cattle and sheep, there are two things that people are talking about. One is pellets, and the other is wafers.

In Oregon there is a new forage processing plant that is making both pellets and wafers. And being put into either pellet or wafer form are both straight hay and complete rations (including hay as well as grain and other supplements).

This forage plant is owned and operated by the Pendleton (Ore.) Grain Growers, Inc. It is located between Hermiston and Hinkle, Ore., at a place now called "Feedville." The forage unit which is now operating will be part of a complete new feed manufacturing set-up which will also include conventional feed milling facilities. Construction work on the latter plant will start soon.

The Pendleton firm, a cooperative, handles grain, petroleum products, farm machinery and seed as well as feed, serving farmers in Umatilla County and surrounding area. At a mill in Hermiston, the organization's feed and seed division has been turning out some 25,000 tons of feed a year, largely pelleted. For some time the old mill combined small amounts of forage with grain and other ingredients for ruminant feeds. But, seeing advantages in greater use of wafered and pelleted hay and complete rations, the firm built its new forage plant at nearby "Feedville." And to further step up its feed milling efficiency and capacity, Pendleton Grain Growers (PGG) will build a 30-ton-per-hour feed plant adjacent to the forage processing unit. The firm is the Purina dealer in its area.

The wafers—also called "Hayfers" and called "Biscuits" by PGG—are made on a Sumner Foragizer. The pellets are made on a 125 h.p. California pellet mill. Both units are in the same building, and both are served by the same hay processing, weighing, mixing, handling and other facilities.

The design and engineering of the plant were furnished by Robert L. Hahn, consulting engineer at Spokane, Wash., and it was built by Henry George & Sons of Spokane.

### Sees Good Future

R. M. McKennon, manager of PGG's feed and seed division, sees a good future for both pellets and wafers in feeding ruminants. Each, he said, has its place in making condensed forms of either forage or complete rations to be self-fed.

In his firm's experience and feeding tests, he reported, complete pellets, with their hay finely ground, have worked out better for lambs than for cattle. When complete pellets are fed to cattle, he said, results are better if some additional roughage is fed. Complete "biscuits," with hay coarsely chopped but not ground, are fed without any additional roughage, Mr. McKennon said.

At any rate, he indicated, there has been a good demand from feeders and farmers for both the pellets and wafers, and both are finding an increasingly important role in modern, mechanized feeding operations for cattle and lambs.

PGG's biscuit making facilities are the first commercial installation of a Sumner Foragizer. In fact, even before the commercial application of the unit, the firm had played an important part in the developmental work and feeding research with the unit.

### Handling Problem

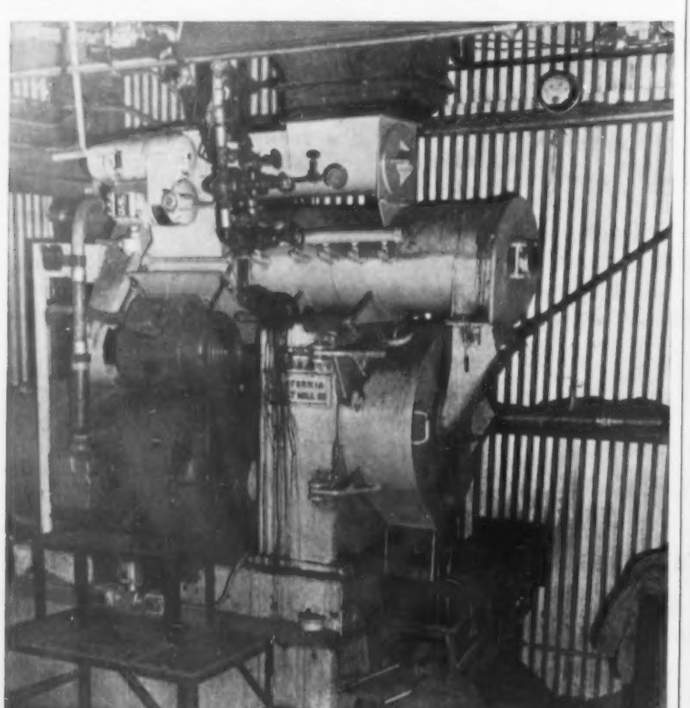
In general, Mr. McKennon said, PGG is pleased with the operation of its forage plant. However, he added, the operation has not been without its problems, particularly in the handling and metering of the coarsely chopped hay for the biscuit machine, over the wide range of proportions of hay that are involved.

Pelleting capacity is approximately 7-8 tons per hour on complete feeds and 6 tons per hour on all-hay pellets. Wafering capacity to date has averaged about 3 tons per hour, with problems in accuracy and uniformity of metering tending to slow the operation, Mr. McKennon said. It should be possible, he added, to get 5 tons per hour.

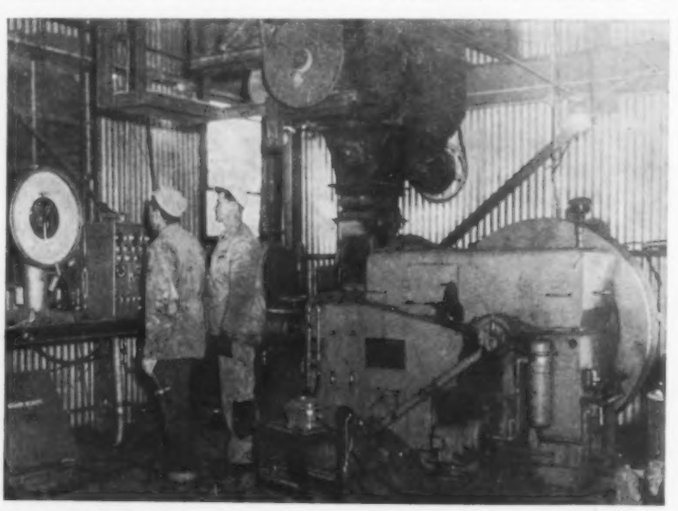
Currently the grain and premix for the complete rations are prepared in Hermiston and transported to bins at the new plant. When the new feed plant is complete, the grain mixes will be made there and conveyed to the forage plant. The grain mixes include such things as barley, corn, beet

**The light-colored sheetmetal building on the extreme right houses the hay grinding equipment. Two air ducts carry the material to a collector in the adjacent dark building. From there, the two drag elevators in the center of the picture elevate the chopped and ground hay to a hopper scale in the main processing building on the left. To the right of the plant are four bulk storage and load-out bins with side discharge gates.**

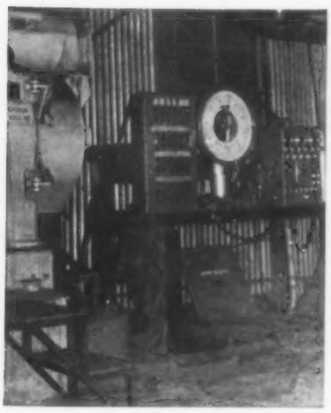
**Shown here is the hay grinding equipment, with a drag in the foreground for carrying the baled hay first into a Miller hay chopper. When the hay is used to make wafers, no further grinding is done. When it is used to make pellets, it is delivered from the chopper to the Prater hammer mill immediately behind the chopper. Both the chopped hay and ground hay are blown to a second shed, and from there conveyed into the main plant.**



**This 125 h.p. California Century pellet mill, with high speed mixer, is used to make conventional hay and hay-and-grain pellets. At the extreme upper left is the molasses line going directly into the pellet mill mixer. The bottom of the surge bin holding the ground material is at the top center of the photo, with the feeder on the pellet mill serving as a live bottom to deliver material into the pellet mill mixer. Below the pellet mill is a short belt conveyor that delivers pellets to the cooler immediately outside the wall.**



**This is the Sumner Iron Works Foragizer for production of wafers, with the live bottom feed immediately above the unit for delivering material from the overhead bin. The wafers are delivered from the cylinders on the left of the 100 h.p. machine to a chute that carries them to the left hand elevator shown in the exterior picture of the plant. After being elevated, the "biscuits" are dropped into the bulk bins. On the left in this picture, two workmen are looking over the control panel and scale dial.**



**Pictured here are the Hardy control panel and scale dial and part of the pellet mill. The control panel is located between the pellet mill and the Sumner Foragizer (out of view on the right).**

pulp, oilseed meal, molasses, millfeed and additives like stilbestrol and antibiotics. These mixes are combined with hay in any desired proportions in both pellets and wafers.

Currently two men are required for the handling of the baled hay and the chopping and grinding operations. For the mixing, pelleting and wafering operations inside the main plant, a push-button system is used, and one man can handle this with no additional help except for maintenance and when products are sacked. Eventually the hay will be field-chopped and ready for processing when it arrives at the plant.

### Hay Processing

The hay chopping and grinding facilities are in a building separate from the main plant. The mixing and pelleting are done in a 21-by-27 steel building with a metal shell.

The baled hay is chopped into lengths of 1 to 2" on a Miller hay chopper, and if it is to be made into wafers, there is no further processing. For pellets, the hay goes from the chopper to a Prater hammermill. The hay is ground over a screen not to exceed ¼", and it may be ground as finely as ⅛". Mr. McKennon said that 5/16 and ⅜" had been tried but that for best pelleting results, not over ¼" is required.

Later, if the hay is field-chopped, no additional processing will be necessary in making the wafers. Only one man would be needed at the grinding point.

The chopped hay for wafers and ground hay for pellets are moved by inclined drag conveyors to the main processing building, over a magnetic separator and into a hopper scale.

If an all-hay product is being made, the hay is discharged into the horizontal batch mixer, a 235-cu.-ft. Marion mixer, when the proper weight is reached. If additional moisture is required, it is sprayed in at the mixer; this is controlled from the push-button panel board. Eventually it may be possible to work out a moisture-sensing device which would determine the moisture additions. If no added moisture is required, the hay goes straight through the mixer.

A semi-automatic system is used to control the movement and weighing of materials for the mixing operation, with a Hardy panel board.

When complete rations are to be made, the grain mixes are drawn from any of the four 24-ton outside bins and elevated into the hopper scale. When the proper weight is reached, the stream is automatically cut off and diverted back to the bins.

### Wafering and Pelleting

In making wafers, either the straight hay or the mixed ration is discharged into a surge bin, which holds 1½ mixer loads, over the Foragizer.

The material then goes through a feeder and into the 100 h.p. Foragizer. The "biscuits" are elevated and dropped into any of four 20-ton steel bulk load-out bins which also are used for pellets. The finished product is discharged by gravity through large 3-by-4 ft. side gates into trucks for delivery.

**Another view (from the opposite side) of the processing building. On the right is the concrete block building housing the boiler which produces steam for the pellet mill. To the right of the plant are two Butler bins which hold grain mixes for incorporation into complete rations. Two additional bins were installed after this picture was taken. At the extreme right, Don Cook, plant manager, is talking with Bob Adelman of Adelman Machinery Co., Seattle.**

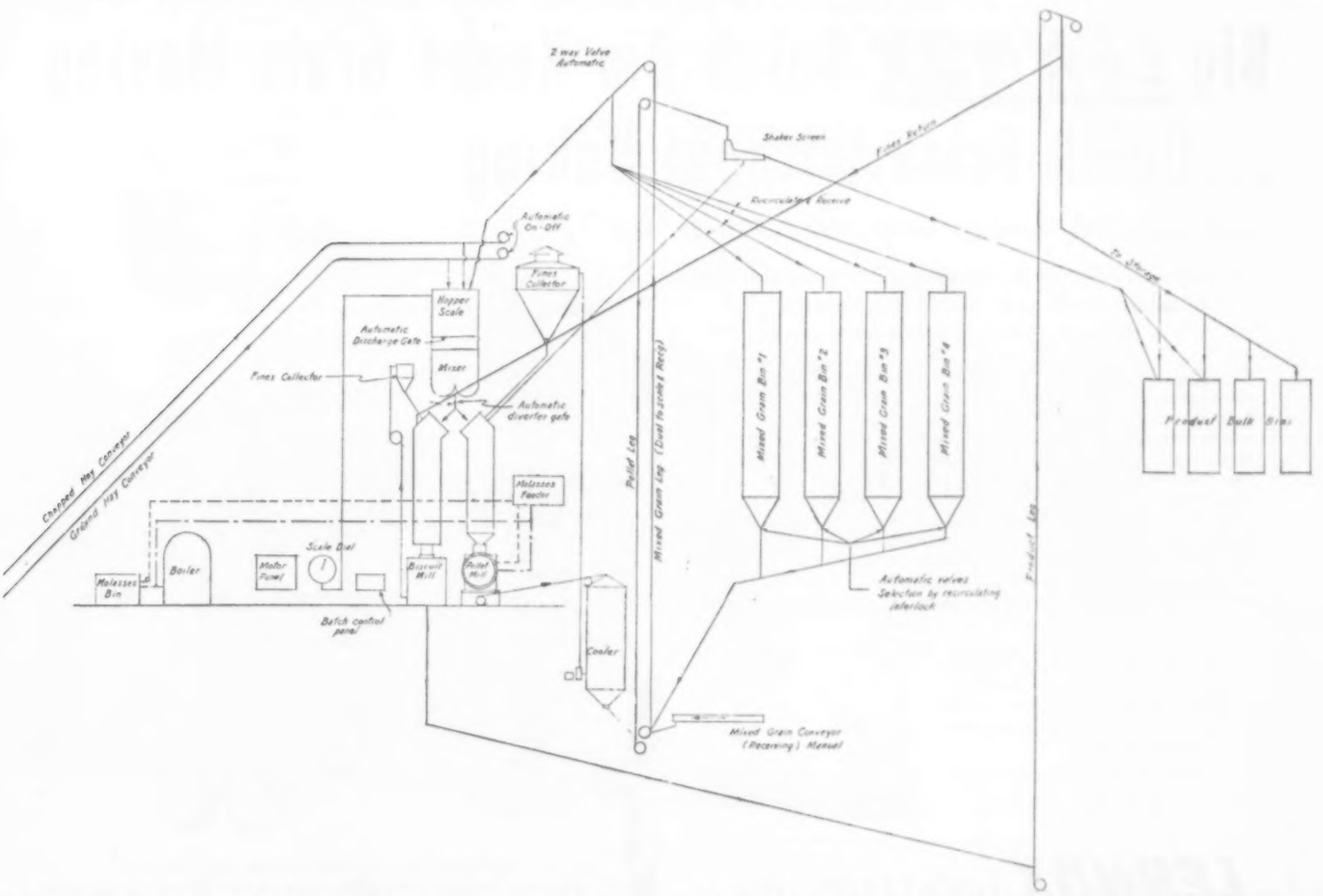
In making pellets, the process is similar. The ground hay is conveyed to the hopper scale, and if complete pellets are to be made, the specified amount of grain mix is added also. The complete batch drops into the mixer, and from the mixer it goes through a diverter controlled from the panel board into a surge bin over the 125 h.p. California Century pellet mill. The feeder on the pellet mill serves as a live bottom to deliver the material into the pellet mill mixer. Molasses is introduced directly into the pellet mill in desired amounts.

Because of a space problem when it was decided to make pellets as well as wafers in this plant, the cooler is in a pit and shed immediately outside the main building. The pellets are moved a short distance by belt conveyor to the California vertical cooler. The cooled pellets are elevated, pass over a California shaker unit to remove fines, and then go into the bulk bins or are sacked off. Like the wafers, the pellets generally are handled and delivered in bulk.

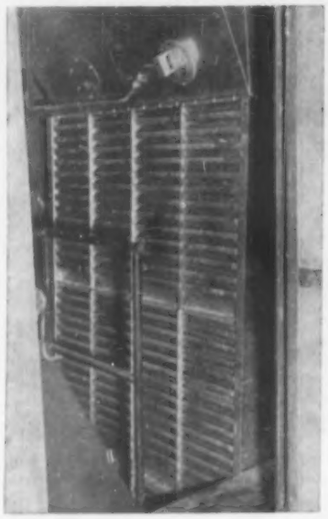
Mr. McKennon noted that special bins and feeders and trucks were required for the wafers. For example, the bulk storage bins have large side discharge gates. For delivery, dump-trucks have been used with success.

As far as problems go, Mr. McKennon said, the principal problems in this new pelleting and wafering plant have come in handling the coarsely chopped and finely ground hay; in the development of necessary bins and feeders; and in feeding and metering the material at the rate desired.

It was pointed out that there is a tremendous difference in density in




**A simplified flow diagram of the wafering and pelleting plant of Pendleton Grain Growers, Inc., near Hermiston, Ore. The chopped hay and ground hay conveyors shown on the left lead from hay processing facilities which are not included in this reproduction of the flow diagram. The hay processing equipment includes a bale buster, hammer mill and collector. The diagram was drawn by Robert L. Hahn, consulting engineer, Spokane, Wash., who furnished the design and engineering of the forage plant.**



**A view through a door of the California vertical cooler used to cool the pellets. The cooled pellets are delivered to the boot of an elevator leg to the right of the mill building in the plant picture, and then are elevated to a shaker and the bulk bins.**

the material, which ranges from about 25 to 100% hay. In making wafers, there has been a problem in metering the material, containing the coarsely chopped hay, accurately and uniformly enough. And, Mr. McKennon noted, it was necessary for the firm to devise its own feeding and metering unit. The wafering machine has a critical feeding level and small range of tolerance, it was explained, and such things as the wide range in density and physical size of the product tend to accentuate the problem. Speed determines the quality of the wafer, Mr. McKennon said, and uniformity is important. Because of some of these problems, capacity has not yet been at the desired level, but the firm is working toward greater output per hour.

Another problem has come with wet hay. It cannot be milled satisfactorily if it is too damp. In the summer, with dry hay, it was possible to chop 8 to 10 tons per hour, while with damp hay, capacity has dropped to 2 tons per hour.

### Feeding Results

Mr. McKennon said that excellent feeding results have been obtained with both the wafers and pellets. Most of the pellets have been used in feeding lambs. In his firm's experience and tests, he noted, feed efficiency and economy have not been at desired levels when pellets, with finely ground hay, were used as the only ration self-fed to cattle. Feed conversion, he said, was better when some additional roughage was fed along with the pellets.

Wafers, with their coarsely chopped roughage, have given encouraging results, he continued. Cattle have gone right on feed on wafers containing 75% grain and premix and 25% roughage; there have been no digestive troubles. Also, cattle have been started on complete rations containing 75% roughage, and then the roughage percentage has been reduced to 50% and later to 25%. This system, said Mr. McKennon, also has worked well.

He mentioned using a complete ration containing half straw and half hay as the roughage. This has been self-fed, and gains of 3 lb. a day have been obtained.

### Value of Self-Feeding

Mr. McKennon emphasized the value of self-feeding complete rations to ruminants, pointing out the labor saving. "You can fill a self-feeder, and the feed will last for a week," he commented.

He also mentioned the value of compressing roughage, for easier handling and less bulk. In fact, he said, his firm is now selling hay wafers in sacks to feeders in Hawaii who want the higher quality forage that is available this way.

Mr. McKennon said the new methods of feeding ruminants are helping feeders to be more competitive and are "putting the individual back into the cattle feeding business."

In this connection, he noted that pellets and wafers must be made and delivered as economically as possible. "For example," he said, "it has to be shown that the cost of wafering will be covered by the difference between hand feeding and self-feeders."

He also commented that PGG feels forage processing facilities will be too expensive for one farm-size operation. He said he doubts that there will be a farm-size unit that will work out well.

When PGG's new feed mill is built, the pellet mill now in the forage plant will be moved to that mill, and all types of pelleted feed, including the pelleted hay and complete rations for ruminants, will be made in the new plant. Plans are to install a second wafer machine where the pellet mill is now located. In the new plant, there will be three pellet mills—one from the Hermiston mill, the one now in the forage plant and another California mill to be added.

The grain mixes for both pellets and wafers will be made in the new mill. Those for the forage plant will be conveyed from the new mill to the bins at the forage unit.

Mr. McKennon said the manufacture of both pellets and wafers for ruminants offers flexibility. "And," he added, "there appears to be a good future for both."

### FEED MAN DIES

SACRAMENTO, CAL. — Laurence W. Baker, owner of the Valley Hay & Grain Co., Sacramento, died recently following an illness.

## Farm Bureau Opens Bulk Terminal

SUNBURY, PA.—The Pennsylvania Farm Bureau Cooperative Assn. of Harrisburg has opened a new bulk terminal near Winfield, Pa., which will serve the Sunbury area.

George G. Connor, executive vice president and general manager, said the purpose of the $100,000 terminal is to help provide feed delivery service to central Pennsylvania farmers direct to farms by special truck which pipes feed into bins or other farm storage areas.

Designed for operation by one man, the terminal structure is 73 ft. high. The bulk feed storage building is 65 ft. long and 16 ft. wide. The 16-bin structure is 53 ft. high and the elevator rises another 20 ft.

Each bin holds 20 tons of feed, giving the terminal a capacity of 320 tons. Approximately 13 different feeds can be stored simultaneously. Primarily, however, the terminal will handle broiler and dairy feeds and some dairy pellets.

Feed will be transported in special Reading Co. railroad hopper cars from the Farm Bureau feed mill at Manheim, Lancaster County, to the terminal. Six 40-ton hopper cars will be used exclusively by Farm Bureau to transport the feed from the mill to the terminal, eliminating the possibility of feed becoming contaminated by foreign materials, officials said.

The terminal will serve farmers in areas of these Farm Bureau cooperatives and service agencies: Union Farm Bureau, Lewisburg; Perry Farm Bureau, Newport; Mahantongo Valley Farm Bureau, Klingerstown, RD; Farm Bureau Cooperative Store, Middleburg; Juaniata Feed & Supply, Mifflin, and Verus Shaner, Hughesville, RD 1.

An allied Farm Bureau program provides for the erection of steel bulk storage bins on farms.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This year, watch the Super 600 make you money . . . drying more profit into every bushel. Let its faster drying, 600 bushel capacity keep you ahead of harvest demand.

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**DR. G. F. HEUSER**
*Director*
**Stonemo Poultry Research Farm**

A career poultryman, college professor, author and editor, Dr. Heuser has been widely acclaimed for his work, his research, and contributions to advances in poultry science.

Dr. Heuser was the third person in the U.S. to receive a Ph.D. in Poultry Science (Cornell, 1918), and for 35 years was Professor of Poultry Husbandry at Cornell University. He is a former editor of both Poultry Science and World Poultry Science Journal.

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**STONE MOUNTAIN GRIT COMPANY, INC.**
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# #2 IN THE SERIES OF

# *Questions and Answers About Granite Grit*

***Question:*** **What are the main benefits of grit feeding that can easily and accurately be measured?**

***Dr. Heuser:*** The two main benefits are increased production (either weight or number of eggs) and feed efficiency. Increase in weight is especially important in broiler production.

***Question:*** **Are there any other important values of feeding grit?**

***Dr. Heuser:*** Yes, an insurance value. As already indicated, the gains usually are not large, but might be considerable under some situations or under stress. The feeding of grit might be of advantage to meet adverse conditions and act as insurance to counteract some of the factors which might be deficient and hence detrimental. The possible loss would be small (the cost of feeding the grit) but the gain might be considerable. In other words, there is little to lose, but there might be much to gain.

A leading poultry nutritionist has recently stated: "A couple of years ago we wondered about the need for grit in the case of broilers being fed all-mash or pelleted diets. However, we now believe that it is wise to feed grit to broilers and other classes of poultry even though they are on all-mash feeds. We have encountered several field cases where birds have become impacted with shavings and other litters, when no grit was fed. I believe that in some cases it might be possible to do a satisfactory job without grit in broilers and layers fed all-mash diets, but it seems to me since there is always a danger of the birds consuming litter, it is good insurance to have grit available."

**Do you have a question** regarding the feeding of granite grit? If you do, please address it to Dr. G. F. Heuser, c/o Stonemo Poultry Research Farm, Lithonia, Georgia.

Birdseye view of the Stone Mountain Grit Company's Poultry Research Farm, Lithonia, Georgia. Here constant feeding experiments are being made by Nutritionists and Research Workers to help you get Maximum Nutritional Values from every ton of poultry feed you buy.

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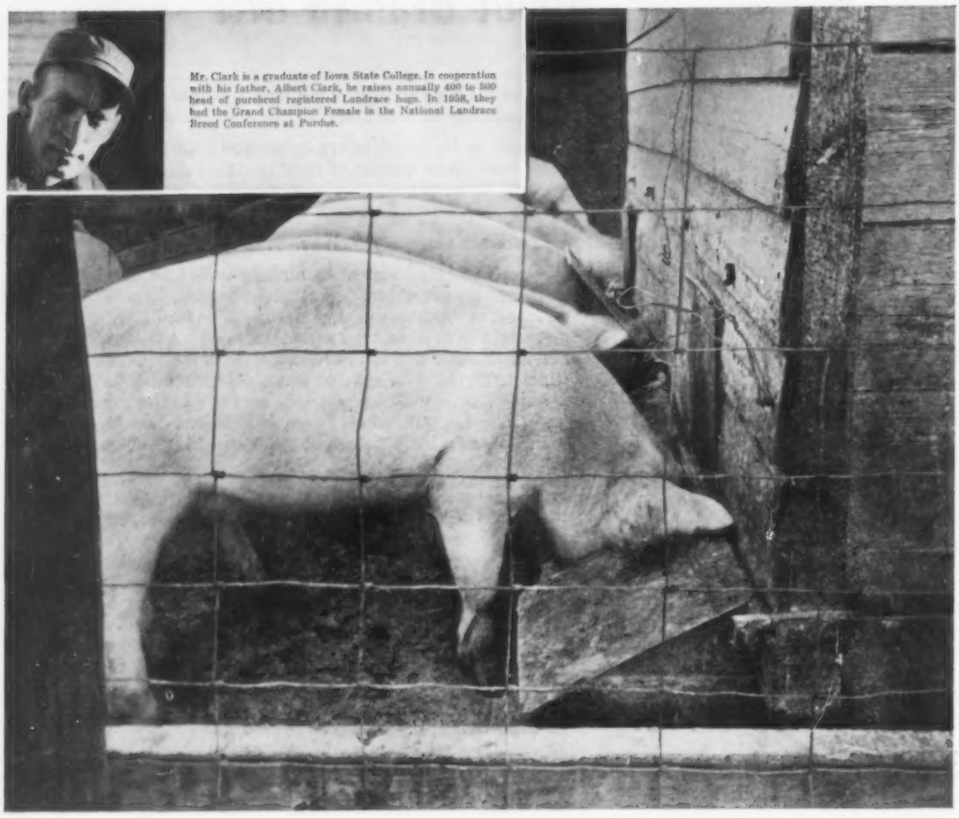

Mr. Clark is a graduate of Iowa State College. In cooperation with his father, Albert Clark, he raises annually 400 to 500 head of purebred registered Landrace hogs. In 1958, they had the Grand Champion Female in the National Landrace Breed Conference at Purdue.

*Says Martin H. Clark of Kanawha, Iowa.*

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"AUREOMYCIN has proved its value to our swine-raising program by eliminating cervical abscesses (which mean a loss of several dollars per animal).

"It has proved its value by reducing the amount of feed needed per 100 pounds of weight gain—from 17 to 23 less pounds of feed are required.

"It has proved its value by controlling subclinical diseases, thereby minimizing the chances of serious infections getting a foothold in the herd.

"We're using AUREOMYCIN all the way through—in breeder stock feed at 25 grams per ton, in pig starter feed at 80 to 90 grams per ton, and in grower feed at 50 grams per ton."

Following a program similar to Mr. Clark's can mean extra market returns for any hog producer! Ask your feed manufacturer or feed dealer for swine feed containing AUREOMYCIN. American Cyanamid Company, Agricultural Division, New York 20, N. Y.

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*Says Fred Stallings o*

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If you are not now making swine feeds containing AUREOMYCIN, plan to do so. Increasing consumer acceptance of such feeds is your assurance of higher sales volume. American Cyanamid Company, Agricultural Division, New York 20, N. Y.

*Says Mr. Charles M. White of Enterprise, Alabama:*

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...YCIN® in feeds," says ...d an average of 5½ ...sale of hogs showed ...weight in only 4½ ...d at premium prices. ...ster means we save ...a year's time, with ...is year, this saving ...of feed earned, or

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## FDA States Policies on Additive Amendment

WASHINGTON — Regulations setting up definitions, procedures and interpretive policy to be followed under the Food Additives Amendment to the Federal Food, Drug, and Cosmetic Act were published by the Food & Drug Administration in a recent Federal Register. The amendment covers feeds as well as foods.

The regulations are effective upon publication. Proposed regulations for comment were published in the Federal Register Dec. 9, 1958, and the comments received were considered in preparation of the final regulations, FDA said.

These regulations cover procedures for submitting petitions for additive uses; criteria to be applied in determing safety of additives; rules for public hearings when controversies arise and related matters.

FDA pointed out that the regulations published recently (Subpart A of 21 C.F.R. Part 121) do not include the list of substances proposed in the Dec. 9 publication for exemption on the grounds that they are generally recognized as safe. The time for submittal of comments on this list has been extended to April 7, 1959, FDA said.

The Food Additives Amendment became fully effective on March 5 for all new additives used for the first time after Jan. 1, 1958. Additional time is permitted by the law for the testing and clearance of additives already in use prior to Jan. 1, 1958.

## Texas Feed Credit Group Elects Officers

NACOGDOCHES, TEXAS — The Texas Feed Manufacturers Credit Assn. recently elected new officers. They are: Johnny Rudisill, Texas Farm Products Co., Nacogdoches, president, and Verner Gortney, International Minerals & Chemical Corp., Texarkana, Texas, secretary-treasurer. Mr. Rudisill was formerly secretary of the group.

## *Bemis Net Income Shows Increase*

ST. LOUIS—Net income of Bemis Bro. Bag Co. for 1958 amounted to $2,601,130, compared with $1,785,862 in the previous year, according to the company's annual report to stockholders. Earnings on common stock amounted to $3.67 a share, or 47% more than the $2.50 a share earned in the previous year.

Bemis' net sales for 1958 amounted to $121,246,401, compared with $121,475,701 in 1957. Following the nationwide pattern, sales volume fell off during the first half of 1958 but turned upward in the second half. Bemis' sales for the final quarter exceeded those of every other quarter of the past two years.

F. G. Bemis, president, in his annual letter to stockholders, stated:

"The profit resulting from 1958 operations showed a marked increase over the previous year. That we were able to accomplish this during a year of generally reduced business activity speaks well for advances made in operating efficiencies. A more intensive budgeting of operations, as well as increased attention to waste and inventory controls, contributed much to these economies.

"Although the total demand for bags throughout the country declined from the previous year, our sales were down less than one per cent, with cotton bags experiencing a small gain for the first time in several years."

William C. Roberson

**SALES MANAGER—William C. Roberson has been appointed sales manager of the Valley Mills division of the Merchants Co., Vicksburg, Miss., according to Everett C. Harriss, general manager of Valley Mills. Mr. Roberson formerly was with Carolina Milling Co., Laurens, S.C., as sales and advertising manager. Earlier he was with Kasco Mills and Wirthmore Feeds. In his new job he will coordinate the sales and advertising activities of Valley Mills. He replaces A. E. Welbourne, who is being transferred to Hattiesburg, Miss., to be manager of the Merchants Co.'s new hatchery and poultry operations. Mr. Roberson is an animal husbandry graduate of Virginia Polytechnic Institute.**

## Albert D. Wilhoit Dies

ST. PAUL—Albert D. Wilhoit, founder of the A. D. Wilhoit Laboratory in Minneapolis, a flour, grain and feed testing firm, died in a St. Paul hospital March 24 after a two and a half year illness. Mr. Wilhoit was 75 years old.

Surviving are his wife, Elizabeth of St. Paul, and two sons, Robert Wilhoit, Seattle, Wash., and Richard Wilhoit, Hopkins, Minn., who has been associated in the business with his father for more than 20 years. Richard managed the business during his father's illness and will continue to operate the laboratory.


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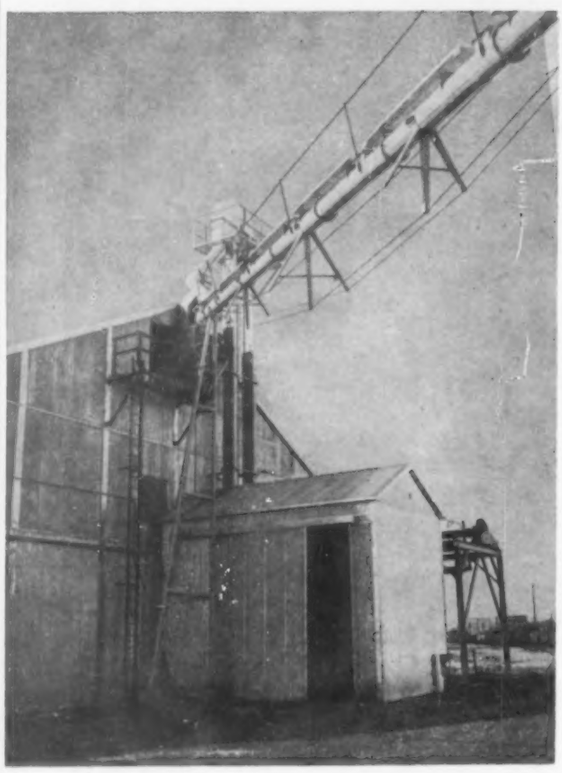

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## Feeding Trials Prove Benefits

Rations supplemented with higher dicalcium phosphate levels produced faster liveweight gains and more efficient feed utilization in a series of cattle feeding tests at State Agricultural Experiment Stations.

### Iowa State[1]

Tests conducted by Iowa State College researchers indicate cattle receiving higher dicalcium phosphate rations graded higher at slaughter and returned greater margins over feed costs. The Iowa State report concludes...in some cases a higher level of total ration phosphorus, possibly as high as 0.3 percent, may well be needed.

### Purdue[2]

According to a study conducted by Purdue University researchers, raising the phosphorus level in a corn-soy ration from 0.30 to 0.45 percent improved rate of gain 29% and feed efficiency 6.6% when fed to growing swine on ladino pasture. A further increase in phosphorus to 0.60% improved feed efficiency 5.7%, but failed to stimulate gains further. Several pigs on the corn-soy basal ration exhibited borderline phosphorus deficiency symptoms.

### South Carolina[3]

An animal deficient in phosphorus from either hereditary genetic defects, or because of prior consumption of a low phosphorus ration may bloat, regardless of the level of nutrition in the feed crop. Therefore, a critical phosphorus deficiency in ruminants should be corrected through feeding of dicalcium phosphate or other mineral phosphates or by feeding high phosphorus concentrated feeds prior to being placed on luscious legume pastures.

### Texas[4]

In feeding trials on the King Ranch in Texas, cows fed supplemental phosphorus weaned 39% more calves, averaging 50 pounds more weight per calf. In addition, feed lot operators in the Southwest have discovered that higher phosphorus levels result in faster gains.

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1. Different Kinds and Amounts of Phosphorus in Fattening Cattle Rations—Agricultural Extension Service, A. H. Leaflet 209; Wise Burroughs, Arthur Raun, Edmund Cheng, C. C. Culbertson, Iowa State College.
2. Phosphorus and Protein Levels for Growing-Finishing Swine on Legume Pasture—C. E. Jordan, J. H. Conrad, M. P. Plumlee; W. M. Beeson, A. H. 215, Purdue University.
3. Relation of Phosphorus Deficiency to Acute Bloat in Ruminants—H. P. Cooper, 69th Annual Report, South Carolina Agricultural Experiment Station, Clemson, S. C., May, 1957.
4. Methods of Supplying Phosphorus to Range Cattle in South Texas—Texas Agricultural Experiment Station, Bulletin 773; E. B. Reynolds, J. M. Jones, H. H. Jones, J. F. Fudge and R. J. Kleberg, Jr.

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# Protein and Energy Requirements Of Chickens in Egg Production

By Dr. Paul E. Waibel
University of Minnesota

Dr. Paul E. Waibel

**AUTHOR—Dr. Paul E. Waibel, associate professor in the department of poultry husbandry, Institute of Agriculture, University of Minnesota, St. Paul, has research interests in general poultry nutrition, including studies of antibiotics, vitamins, unidentified factors, protein, energy and carcass quality with chickens and turkeys. He was a teaching assistant at the University of Wisconsin, where he received his M.S. and Ph.D. degrees before becoming a research associate in 1953 at Cornell University. He has been at Minnesota since 1954. His B.S. degree was obtained at Rutgers University. Dr. Waibel is a native of Hawthorne, N.J.**

## A. Requirement for Protein

In 1941, Dr. G. F. Heuser reviewed available data on the protein requirement of laying hens. He stated that protein requirements can be met by amino acids, the components of protein, and that eventually we will calculate rations on the basis of amino acid content.

Heuser's review suggests that there was just about as much confusion over protein requirement in 1941 as today. Various reports indicated protein requirements of approximately 12-16%. Some reports indicated that low protein diets resulted in lower hatchability, but Heuser pointed out that "the improved hatchability on rations containing animal protein may be due in part to their vitamin values." We now know that this effect was produced mainly by vitamin $B_{12}$.

Developments in this area have come slowly since it is laborious to determine amino acid requirements with natural diets. We may look optimistically, however, for progress in the next few years. The development of free amino acid diets which support egg production by Fisher and associates (1956) at Rutgers University will allow more precise research on minimum amino acid requirements, effects of imbalances and interrelationships with other nutrients. Thus, we may look forward to improved studies with practical diets to speed up progress.

The term "percentage protein requirement" has received dominant attention in the nutrition of the hen. There is no doubt of the intrinsic importance of a proper ratio of metabolizable energy and effective protein with chicks and other animals. While the same mechanism must be important with hens, it has been impossible to clearly demonstrate this. Other factors regulating protein requirement, such as level of egg production, amino acid balance and availability, environment and genetics are of sufficient import so as to presently mask the recognition of a proper nutritive ratio.

There has been a good deal of lively research and discussion suggesting that the protein requirement of hens is anywhere from about 12 to 18% of the diet. It might be instructive to tabulate the available research in order to evaluate what the hen has already indicated. This has been done in Table 1.

**STUDIES ON PROTEIN REQUIREMENT** — Reid, Quisenberry and Couch (1951) reported that rations of 13 or 15% protein resulted in reduced egg production when compared to a ration containing 18% protein. The addition of methionine in the low protein rations did not consistently improve egg production.

In an experiment reported by Berg et al. (1952), New Hampshire pullets were maintained on 11, 13 and 15% protein levels in the presence and absence of vitamin $B_{12}$. Averaging the groups with and without vitamin $B_{12}$, it appears that 13% protein was adequate for egg production.

The result of two Vermont experiments with New Hampshire meat type pullets was reported by Ringrose et al. (1954). Diets were not given, but it was stated that high energy rations were used. Combined data from the two experiments indicated no important differences between 15 and 18% protein levels. The small differences existing tended to favor the 15% level of protein. These workers concluded that 15% protein is satisfactory for meat-type New Hampshire pullets for egg production on a high energy diet.

The experiments of Heywang et al. (1955) considered hot weather conditions for layers. The diets were essentially corn diets containing 5% alfalfa meal, but the supplementary protein came exclusively from a constant mixture of four parts of sardine meal and one part of casein. No soybean meal was used. In the first experiment 25 White Leghorn pullets per group which had been in production for at least five months were kept on experiment for 112 days under conditions of high temperatures; that is, 102° and 88°F. for average maximum and mean temperatures, respectively. In this experiment 13% protein supported just as good production as higher levels. During 0-153 days of experiment 2, average maximum and mean temperatures were 72 and 59°F., respectively, and 15% protein appeared to satisfy the requirement. During 154-273 days of experiment 2, average maximum and mean temperatures were 102° and 88°F., respectively, and here 15% protein also seemed to be adequate. The data from both experiments indicated that the protein requirement of the hen during hot weather was not greater than 15% of the ration.

The protein requirement work of Hill and Anderson (1955) was reported in three separate experiments. As a result of the first two experiments, it was concluded that 15% protein was adequate to support maximum egg production with White Leghorns of a mature body weight of approximately 5 lb. In the third experiment, where 4 lb. Leghorns were used, it appeared that 16.5% protein was adequate. The authors concluded that the protein requirement in the presence of 5% yellow grease was no higher, if as high, as in the rations without added fat. The authors interpreted the data to indicate a sparing effect of added fat upon the requirement for protein.

In an experiment by McDaniel et

**TABLE 1. Summary of investigations on the protein requirement of laying hens.**

| Investigator | State | Conditions: Breed | Pens | Duration of test days | Birds per group No. | Egg production % | Optimum protein % | Productive energy Cal/lb. | C/P | Other protein levels tested % | Ration characteristics: Corn % | Soybean Meal % | Added Fat % | Other % | Miscellaneous |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Reid et al. (1951) (abstract) | Texas | WL | ? | 280 | 36 | ? | 18 | 933 | 52 | 13, 15 | 68 | 25 | 0 | 3 | |
| Berg et al (1952) | Wash. | NH | floor | 168 | 20 | 57 | 13 | 879 | 68 | 11, 15 | 17.6 | 21.6 | 0 | 52.8 | 17.6% oats, 17.6% barley, 5% alfalfa, 12.6% cerelose |
| Ringrose et al. (1954) (abstract) | N.H. | NH | floor | 210 | ?x2 | ? | 15 | ? | ? | 18 | ? | ? | ? | ? | |
| Heywang et al. (1955) | Ariz. | WL | floor | 112 | 25 | 49 | 13 | 1002 | 77 | 11.5, 15.0, 16.5, 18.0, 19.3 | 80.4 | 0 | 0 | 12.5 | Exp. 1—hot |
| | | WL | floor | 153 | 25 | 59 | 15 | 997 | 66 | 11.5, 15.0, 16.5, 18.0, 19.3 | 77.9 | 0 | 0 | 15 | Exp. 2—cool |
| | | WL | floor | 120 | 25 | 50 | 15 | 997 | 66 | 11.5, 15.0, 16.5, 18.0, 19.3 | 77.9 | 0 | 0 | 15 | Exp. 2—hot |
| Hill, Anderson (1955) | N.Y. | WL(5 lb.) | floor | 300 | 35 | 64 | 16 | 944 | 59 | 14, 18 | 48.2 | 10.3 | 0 | 37.5 | Exp. 1 |
| | | WL(5 lb.) | floor | 300 | 35 | 67 | 15 | 960 | 64 | 14, 16 | 51 | 7.5 | 0 | 37.5 | Exp. 2 |
| | | WL(4 lb.) | floor | 300 | 35* | 61 | 16.5 | 936 | 57 | 15, 16.5, 18 | 46.8 | 11.7 | 5 | 37.5 | Exp. 3 |
| | | WL(4 lb.) | floor | 300 | 35* | 68 | 16.5 | 1016 | 62 | 15, 16.5, 18 | 40.5 | 13 | 5 | 37.5 | Exp. 3 |
| McDaniel et al. (1957) | Texas | WL | cage | 252 | 24 | 48 | 17 | 962 | 57 | 18 | 20 | 12.5 | 0 | 61.7 | High milo diet |
| | | Hyline | cage | 252 | 22 | 63 | 17 | 962 | 57 | 18 | 20 | 12.5 | 0 | 61.7 | High milo diet |
| | | DeKalb | cage | 252 | 24 | 66 | 17 | 962 | 57 | 18 | 20 | 12.5 | 0 | 61.7 | High milo diet |
| | | WL | cage | 252 | 24 | 48 | 17 | 1050 | 62 | 18 | 9.25 | 15 | 10.5 | 59.5 | High milo diet |
| | | Hyline | cage | 252 | 22 | 68 | 18 | 1050 | 58 | 17 | 5.35 | 20.5 | 12 | 56.4 | High milo diet |
| | | DeKalb | cage | 252 | 24 | 70 | 18 | 1050 | 58 | 17 | 5.35 | 20.5 | 12 | 56.4 | High milo diet |
| Miller et al. (1957) | Wis. | WL | cage | 105 | 4 | 76 | 13.4 | 940 | 70 | 12.0, 13.4, 14.7 | 37.4 | 0 | 7.0 | 57.6 | Exp. 1 |
| | | WL | cage | 112 | 10 | 76 | 12.9 | 940 | 73 | 10.1, 11.1, 12.3, 12.9, 14.0 | 10.8 | 0 | 5.5 | 84.2 | Exp. 2 |
| MacIntyre, Aitken (1957) | Nova Scotia | BPR | floor | 280 | 180 | 61 | 16.5 | 720 | 44 | 20.6 | 15.6 | 6 | 0 | 76 | 46.9% wheat, 17.5% oat hulls |
| | | BPR | floor | 280 | 180 | 60 | 16.3 | 900 | 55 | 21.3 | 20.6 | 4.5 | 0 | 72.4 | 61.9% wheat |
| | | InX,WL | floor | 280 | 180 | 71 | 15.4 | 840 | 54 | 21.2 | 10.1 | 4.2 | 0 | 83.7 | 30.4% wheat, 28% oats, 15% barley |
| | | InX,WL | floor | 280 | 180 | 70 | 16.3 | 910 | 56 | 20.0 | 21.1 | 3.6 | 0 | 73.3 | 63.4% wheat |
| Milton, Ingram (1957) (abstract) | Ala. | ? | ? | 240 | 50x2 | ? | 18 | ? | .. | 16, 14 | ? | ? | ? | ? | high temperature |
| | | ? | ? | 240 | 50x2 | ? | 16 | ? | .. | 12, 14, 18 | ? | ? | ? | ? | old hens |
| | | ? | ? | 240 | 50x2 | | 14 | ? | .. | 12, 16, 18 | ? | ? | ? | ? | pullets |
| Thornton et al. (1957) | Colo. | WL | cage | 224 | 20 | 68 | 13 | 962 | 74 | 11, 15, 17 | 76.5 | 13.6 | 0 | 3 | |
| Hochreich et al. (1958) | Tenn. | WL | floor | 300 | 52x2 | 71 | 17.0 | 958 | 57 | 15.7, 18.35 | 72 | 17 | 0 | 7.5 | |
| | | WL | floor | 300 | 52x2 | 72 | 17.0 | 1065 | 63 | 15.7, 18.35 | 64 | 18.4 | 6.6 | 7.5 | |

*Assumed value.

al. (1957), 17 and 18% protein levels were compared at two energy levels. It appeared that 17% protein was adequate with 962 productive energy calories per pound (PE Cal/lb.) for White Leghorns, while at 1,050 Cal/lb. the higher producing DeKalb and Hyline stocks may have required the higher protein (reviewer's conclusion, not authors'). In another paper by the same workers (Price et al., 1957), 17% protein performed as well as 18% at 937, 970 and 1,050 PE Cal/lb. for White Leghorns.

Miller et al. (1957) studied variations in dietary protein and energy for White Leghorn pullets. In the first experiment, 13.4% protein was required to support good egg production, body weight and egg weight. In the second experiment, 12.9% protein was required to support these functions. The basal diets for experiments 1 and 2 were quite unusual in composition, containing 10% wheat bran, 10% wheat middlings, 10% ground oats, 10% dried whey, 10% alfalfa leaf meal, 5% soybean oil, arginine and phenylalanine. The diets contained no soybean oil meal and increases in protein were obtained by the inclusion of fish meal. In experiment 3 (not on table), egg production was satisfactory on rations containing 12.5, 14.8, 17, 18.3 and 20.9% protein with energy values of 640, 785 and 930 PE Cal./lb., in a factorially designed experiment. In experiment 4, where a range of 12.5% to 19.2% protein was employed with an energy range from 785 to 1075 PE Cal/lb. (factorial), statistical analysis again showed no significant variations in egg production. It was concluded that a wide calorie-protein ratio range can be tolerated by laying pullets without affecting egg production. Protein levels did not influence the efficiency of feed utilization. Variations in protein and energy nutriture of laying birds did not affect the growth rate of chicks produced.

In the work of MacIntyre and Aitken (1957), high wheat rations of 15-16 or 20-22% protein and varying in energy from 720 to 910 PE Cal/lb. produced uniformly good egg production on either a hen-housed or hen-day basis. Measurements of egg quality indicated no differences in egg weight, specific gravity, Haugh units, or blood and meat spots. Hens fed rations containing both high protein and energy gained a little more in weight compared to birds receiving either high protein or high energy separately. Protein level did not influence feed efficiency.

Milton and Ingram (1957) concluded that 18% protein was required by hens subjected to 90°F. during the day where the room was allowed to cool to 70° at night. Comparisons here were made with 16 and 14% protein rations. Comparing old hens and pullets, presumably on 12, 14, 16 and 18% protein, they reported that the hens required 16% protein and the pullets seemed to do satisfactorily with 14% protein.

The work of Thornton et al. (1957) indicated that satisfactory egg production was achieved with White Leghorn H & N strain cross pullets for 224 days on a simplified corn, soybean meal type ration containing only 11% protein. These workers also measured efficiency of feed utilization, body weight gains and egg weight. Egg size was smaller with the 11% protein group (24.6 oz. per doz. compared to 25.4 for 13% protein), hence it appears that 13% protein was required. In this experiment, the effectiveness of methionine and lysine and the combination of both was determined. It is noteworthy that methionine supplementation resulted in increased egg size at 11% protein.

Hochreich, Douglas, Kidd and Harms (1958) indicated that 17% dietary protein produced significantly higher egg production than 15.7% protein, either in the presence or in the absence of 6.6% stabilized yellow grease. Production in the better groups was maintained at a level of 70% for more than a 10-month period. An 18.35% protein comparison was made and the results were no better than 17%. Better feed efficiency, per dozen eggs, was noted on the 17 and 18.35% protein groups, but this was probably an effect of rate of production rather than true efficiency variation. The fact that the higher energy level at the suboptimum 15.70% protein level did not result in depressed egg production is reminiscent of the Hill and Anderson (1955) suggestion of a sparing effect of added fat upon the protein requirement. Egg size was slightly larger and shell thickness was slightly thinner in the presence of added energy at each protein level. Laying house mortality was similar for all treatments. Further, the addition of energy to these rations resulted in slightly heavier birds, but the differences were found to be nonsignificant. Fertility and hatchability were unaffected by dietary treatments.

In two long-term (336 days) experiments, reported in abstract form, MacIntyre (1958) found that low protein rations of 12.9-14.2% resulted in poorer feed efficiency compared to control rations at 15.7-17.5% protein. Egg production data suggested that the low protein levels were marginal.

**PROTEIN REQUIREMENT CONCLUSION**—In all the studies cited, there are only two satisfying the qualifications of 70% production for 200 days or 60% production for 300 days and enough groups to establish suboptimum egg production and a plateau of performance. These are the reports of Hill and Anderson (1955) and Hochreich et al. (1958). Here, in six comparisons, the average optimum calorie to protein ratio was 60. This is equivalent to 15% protein for a 900 calorie per pound ration. Indeed, this is good agreement with the National Research Council (1954) suggested requirement.

In reports where over 60% production was achieved, the following details seem worth mentioning:

In McDaniel and associates' work, there was indication of improved production at 18% protein (1,050 calories, C/P 58.4), but the lowest and only other level of protein was 17%.

Miller and associates' work shows the potentiality of decreased protein requirements, although the diets are not of a commercial nature and the experiments were not continued for a complete production year.

In MacIntyre and Aitkens' work, ratios of 55, 54.5 and 55.8 were satisfactory compared to narrower ratios, but no wider ratios were tested.

In Thornton and associates' experiment, a ratio of 75 was as good as narrower ratios; however, this was a single experiment and the range in egg production rates was 56-69% for high production-type Leghorns.

As a guide, using corn-soybean meal-type diets, containing about 900 PE Cal/lb., it appears that the NRC requirement of 15% protein is generally satisfactory. In specific instances, where it is felt that the protein requirement may be higher, it may be desirable to raise the level to 16% (giving C/P of about 56 in 900-calorie diet).

Where higher energy diets are formulated, especially in view of work showing development of fatty livers and other cited disorders, it appears desirable to adhere to the nutritive ratio approach.

The following factors have been indicated to cause a requirement for a greater proportion of dietary protein: higher egg production, smaller hens, cage housing of birds, poor protein quality (amino acid deficiency), amino acid imbalance, older birds, higher environmental temperatures, and environmental stress where feed consumption may be depressed.

**HOW ABOUT FUTURE?**—An interesting question is what the potential may be regarding eventually decreasing protein levels. A 58 gm. egg contains approximately 7 gm. protein. Thus, a hen eating 100 gm. feed per day would require 7% protein just for a dairy egg, assuming 100% efficiency in conversion of food protein to egg

(Turn to page 30)

**ADA PLANS PROMOTION—The promotion and advertising committee of the American Dehydrators Assn. met recently in Kansas City to plan activities for the coming year. Seated from left to right are: Joseph Chrisman, ADA executive vice president; E. T. (Don) Ruppe, Central Alfalfa, Inc., Lexington, Neb.; William H. Smith, Al-Fa Meal Co., Columbus, Neb.; Ralph F. Beermann, Beermann Bros. Dehy, Dakota City, Neb., ADA president. Standing left to right are: John A. Arnold, Arnold Alfalfa Mills, Beardstown, Ill.; Robert Fulton, Alfalfa Division, Archer-Daniels-Midland Co., Kansas City; Howard Rhea, Dehy Alfalfa Mills, Inc., Fremont, Neb.; William H. Healey, Gothenburg (Neb.) Feed Products Co.; Robert M. Bunten, Jr., Kaw Dehydrating Co., Topeka, Kansas.**


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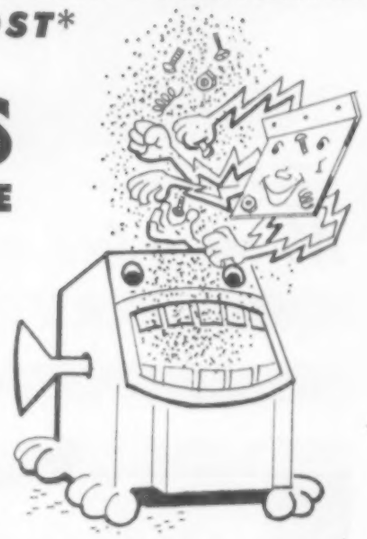

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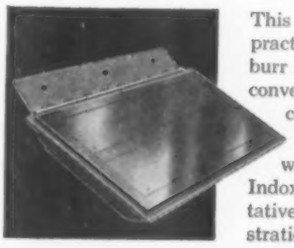

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in conversion of feed protein to egg

(Turn to page 30)

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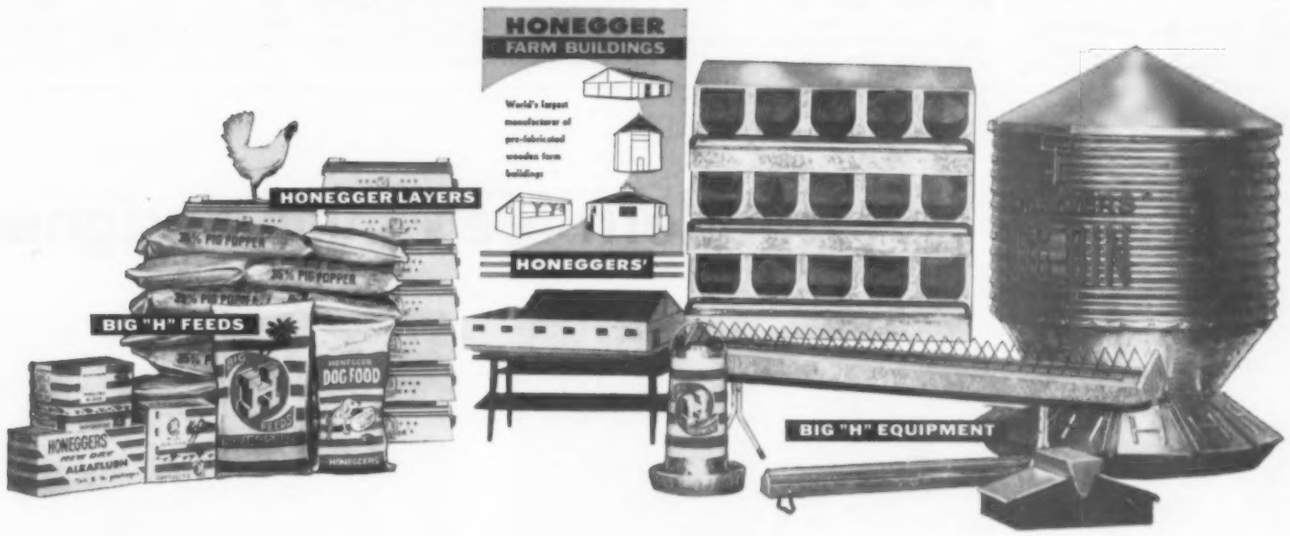


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protein. Hainan (1948) indicated that a 4 lb. hen requires 2.5 gm. digestible protein per day for maintenance, and this would equal about 3% crude protein, raising the total to about 10%.

This is an unusual illustration and the fact that various investigators have been able to approach 11-12% protein levels with good production speaks highly of the efficiency of the hen in converting dietary nitrogen to egg nitrogen.

Fisher and Johnson (1958) recently reported good egg production and general results with a diet containing 10.4% protein, where the amino acid content was similar to that developed with the use of free amino acid diets. In this work, an 11.3% protein ration gave inferior results suggesting an amino acid imbalance. It appears that the closer we get to minimal protein nutrition, the more important amino acid balance will become.

Through amino acid supplementation, it should be possible eventually to feed the hen less protein than presently recommended.

### B. Requirement for Energy

Nutrient requirements are dependent on growth rate, egg production, environment and genetics, nutrient inter-relationships, and the amount and type of energy which must be oxidized in metabolism. In establishing the level of a dietary nutrient, it is convenient to use the ratio technique with dietary productive or metabolizable energy as the guide. Estimating energy requirements is more complex. One could establish some other nutrient in the ration, such as protein, and then establish an energy requirement based upon it, but this approach is unrealistic. It is also possible to determine the daily energy requirement of the hen for her various purposes, and this is important information to develop. To be practical, however, energy requirements should be stated in Calories per unit of feed. This is difficult, however, because it is dependent on the amount of feed the hen will voluntarily consume. A summary of the literature on energy requirements of the hen follows.

**STUDIES ON ENERGY REQUIREMENT**—In the results shown in Table 1, there were a few investigations on protein requirements which also considered energy requirements. Hill and Anderson (1955) found that the use of 5% yellow grease at 15, 16½ and 18% protein levels (960 PE Cal./lb. basal diet) resulted in greater egg production. McDaniel and associates' (1957) data showed that at 18% protein added energy from poultry oil (1,050 vs. 962 PE Cal./lb.) gave slightly higher production with Hyline and DeKalb stocks, but not with White Leghorns. Miller et al. (1957) observed that the amount of energy, ranging from 640 to 1,075 Calories per pound at various protein levels did not have any influence on egg production. The work of MacIntyre and Aitken (1957) indicated that 720 Calories per pound of ration produced as good production as 900 Calories per pound. Hochreich et al. (1958) found that the addition of 6.6% yellow grease to a diet containing 950 PE Cal./lb. did not affect egg production.

Heuser et al. (1945) reported that rations containing feed ingredients of a fibrous nature, such as oats and wheat by-products, were not as efficient as less fibrous feed containing crushed wheat for egg production and body weight gain with White Leghorns. The ration formulations were not presented and thus it was not possible to determine the degree of energy restriction with the high fiber diets.

At about the same time Bird and Whitson (1946) using Rhode Island Reds, pointed out the extreme efficiency differential between the low and high energy rations, formulated so that 10% oats, 15% wheat standard middlings, 10% wheat bran and 6% alfalfa meal replaced ground wheat. These workers concluded that egg production was approximately as good on the high fiber ration.

Lillie et al. (1952) reported that the addition of 8% lard to the ration of Rhode Island Reds produced greater body weight gains and improved feed efficiency, but not egg production.

Singsen et al. (1952) reported that the University of Connecticut's high energy ration (essentially corn-soy type) produced greater egg production in four of five experiments, compared to the New England College Conference 1949 ration which contained 25% wheat standard middlings and 20% oats using Barred Plymouth Rock and Rhode Island Red breeds.

Gerry (1954), using various heavy breeds, reported that egg production and egg size were similar with either high efficiency (corn-soy type) or conventional rations (containing wheat standard middlings and ground oats). The high efficiency rations were again found to be more efficient and mortality was reported to be slightly lower with the high efficiency rations.

Hill et al. (1956) reported two experiments with White Leghorns utilizing a wide range of energy levels from 740 Calories per pound to 1,025 Calories per pound. Egg production increased under cold winter conditions up to the highest energy level. It was pointed out, however, that the 945 Calorie ration may be near the minimum energy requirement since in other experiments egg production was not improved in cold weather by the use of supplemental fat or from feeding part of the ration in the form of pellets. Increased dietary energy resulted in larger body weight gains.

In a very thorough report involving nine experiments using a variety of breeds and management systems 1949-1955, Berg et al. (1956) reported that egg production was not affected by dietary energy levels from 1,100 to 1,367 Calories of metabolizable energy per pound of feed (697-905 PE Cal./lb., respectively). The high energy rations were based upon liberal use of corn or milo with no added fat, and the low energy rations included barley, oats, and wheat mixed feed. Birds on the higher energy rations


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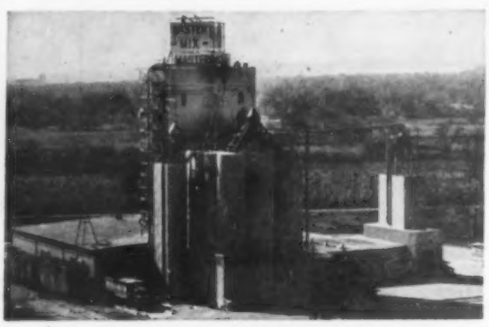

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**PEOPLE SUPPLY, INC., CHARLES TOWN, WEST VIRGINIA.** Manufacturing a complete line of livestock and poultry feeds, this brick and concrete mill features the latest in feed equipment. Credit for building a one-man feed store into a highly respected, successful, well-balanced business goes to owner Joseph A. Warrenfeltz, who has been serving Charles Town, West Virginia with quality feed for the past quarter of a century.

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consistently gained more body weight during the year.

Results of an experiment by Anderson et al. (1957) using White Leghorns indicated that egg production and livability were unaffected by rations containing 723 or 884 PE Cal./lb. for a full laying year. Neither ration contained added fat, and the low energy ration included bran, barley and oats.

Harms et al. (1957) compared low and high energy rations containing 721 and 900 PE Cal./lb. Using White Plymouth Rock, New Hampshire and White Leghorn pullets, these workers obtained increased egg production to higher energy in two separate experiments. Also, efficiency of feed utilization was improved with the added energy and the hens tended to add more body weight with the high energy ration. Mortality in the hen house was unaffected by dietary energy levels.

Price et al. (1957) using White Leghorns in cages found similar egg production at 937, 970 and 1,050 PE Cal./lb. Both 17 and 18% protein levels were used.

**ENERGY REQUIREMENT CONCLUSIONS**—The results of various researches on energy requirements for maximum egg production are inconclusive. There is evidence showing that birds receiving relatively low energy diets are at times capable of giving just as good production as higher energy levels. On the other hand, there are good studies indicating that higher energy diets are beneficial.

The instances where decreased dietary energy lowered egg production usually involved the use of 15-30% wheat by-products, 0-20% oats, and increased alfalfa levels. Unfortunately, since very few experiment stations have pelleting facilities, all the studies were conducted with rations in meal form. In view of the studies of Lillie et al. (1951) showing that pelleting greatly alleviated the "depressing" effect of fiber, probably the rations reviewed would have given optimum performance (except feed efficiency) if pelleted.

To state an energy requirement for hens as Calories per unit of feed is impossible, because of insufficient research. Thus far we have only enough variable evidence to indicate that many factors are important in determining whether or not a hen can consume enough feed to satisfy her energy requirement for top performance. It would be interesting to discuss the many factors dealing with feed consumption, but mention of physical form of feed, quality of feed, ambient temperature, health and genetics will have to suffice.

Studies showing the effect of added fat on egg production are inconclusive. In both of Hill's reports, the addition of fat to high energy diets improved egg production, although other studies were cited where fat was without effect. The reports of Hochreich et al. (1958), Lillie et al. (1952) and Miller et al. (1957) found no effect due to added fat. It is possible that fat may have a beneficial effect under cold environmental conditions. It was shown by Hill that production was improved mainly during the cold winter months.

It is apparent that feed efficiency is consistently improved when dietary available energy is increased. Hill (1956) showed that the relation between energy level and relative efficiency was linear, and that improvement in feed efficiency was approximately proportionate to the increase in dietary energy. MacIntyre and Aitken (1957) found that feed required per dozen eggs increased approximately 11% per 100 Calories decrease in PE per pound of feed. McDaniel et al. (1957) reported that an increase of 88 Calories (962-1,050) PE per pound of feed resulted in an average of 10.2% reduction in feed consumption per dozen eggs.

**TOO MUCH ENERGY?**—Thus far we have considered the effects of insufficient dietary energy for hens. With the generalization that hens eat to satisfy their energy requirements, it is frequently tacitly assumed that at this point they quit eating. Excellent improvements in feed efficiency tend to substantiate this generality. In reviewing the various papers on energy requirements it is virtually a rule that birds receiving more energy gained more weight during the season.

Just how much weight (and fatness) should hens gain during the laying year, if any? On strictly economic grounds, the hen should be as light in weight as possible conducive to desired egg production, to keep her maintenance costs down. She shouldn't require much of a reserve energy supply (depot fat), but she should keep daily nutrient consumption commensurate with production. This is the principle adopted in the interesting controlled feeding work of Singsen et al. (1958). These workers found that ad libitum feeding of a high efficiency ration (1,014 PE Cal./lb.—Titus) containing 5% animal fat to Arbor Acre White Rock pullets under floor management produced a marked increase in body weight (obesity) and mortality rate, but similar hen-day egg production as compared to controlled feeding of the same diet or ad libitum feeding of a low efficiency diet (857 Cal./lb.).

It appears that caged birds suffer more from problems of obesity than do floor-housed birds. McDaniel et al (1957) reported that floor-housed control birds contained nearly 10% less liver fat, and lower serum cholesterol values than birds in cages (36 weeks). Further, in a study of 17 and 18% protein diets containing 962 and 1050 PE Cal/lb. higher energy levels raised the liver fat and serum cholesterol values somewhat, while higher protein levels reduced the values. White Leghorns and Hyline and De-


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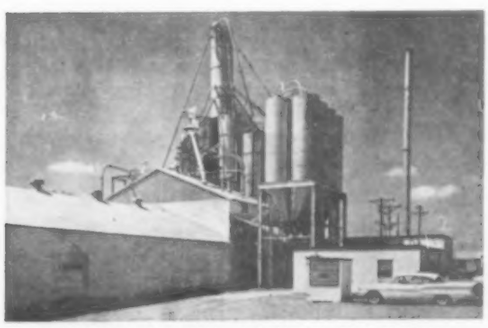

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Kalb hybrid inbred stocks were used.

In a subsequent paper by Price et al. (1957), it was confirmed that cage layers showed a much higher percentage of liver fat than controls on the floor. In this study, 17 and 18% protein diets were each fed at 937, 970 and 1050 PE Cal/lb. to White Leghorns in cages for a 28-week period. The effects of dietary energy and protein on liver fat and serum cholesterol levels shown by McDaniel et al. were not apparent in this study. It was found that non-laying cage birds showed definite enlarged fatty livers and increased serum cholesterol values compared to controls in production. It would be interesting to know whether this abnormal lipid metabolism was a cause or effect of poor egg production.

Weiss and Fisher (1957) reported that the addition of 5-10% of added animal fat to laying rations of White Leghorns maintained under floor conditions resulted in an apparent derangement in lipid metabolism characterized by elevated plasma cholesterol and total plasma lipid, excess deposits of body fat, friable and fatty livers, fatty deposits in and around the kidney and greater severity of aortic atherosclerosis.

In a study of the effects of dietary protein and energy on the incidence of atherosclerosis in laying hens, Ferguson et al. (1958) were unable to show an apparent relation between changes in the blood vessel (intima and media) and the nutritive status of the birds. Levels of 15, 20 and 25% protein were used with an energy range of 750-960 Cal/lb. Poultry oil and soybean oil were used to increase dietary energy.

Leveille and Fisher (1958) reported the effects of 10% animal fat and 10% corn oil for White Leghorns maintained in cages beginning at 12 weeks of age. After a year, egg production was similar for all groups of birds. The birds receiving animal fat were slightly heavier in body weight. The birds receiving corn oil had a higher iodine number of the egg fat indicating greater unsaturation. Birds receiving animal fat exhibited higher plasma cholesterol values, and increasing the dietary protein did not reduce plasma cholesterol levels.

Kokatnur et al. (1958) fed male chickens 12-18 months of age diets containing 7.5, 15 and 30% protein with 0.1 or 15% corn oil. It was noted that the largest increase in serum cholesterol was noted in birds which had consumed the least amount of protein. It was suggested that a reduction in serum cholesterol may be produced more efficiently by increasing dietary protein rather than decreasing intake of fat.

Donaldson and Millar (1958) recently reported observations on the use of added animal fat in laying rations of various breeds. The addition of 3% fat over a 350-day period resulted in poorer hen-housed egg production, greater body weight gains and increased mortality (associated with obesity and/or fatty degeneration and hemorrhage in the liver and kidneys).

The investigations cited regarding fatty livers and cholesterol studies point to importance of increased research in these areas. Singsen and associates' controlled feeding work indicated that high energy diets containing 5% animal fat gave excellent results when diet intake was limited, compared to excessive gains and increased mortality when ad libitum consumption was allowed. This suggested that fat per se was not the causative agent of erratic performance but rather excessive energy intake. However, other cited reports implicate fat, per se, and more particularly animal fat with the obesity problems.

To the writer it would seem that heavy breeder hens and cage layers would usually not benefit from added dietary fat, while 2 or 3% of fat with egg laying-type birds on floors could be justified if economical. (Please don't ask if floor layers with 0.8 sq. ft. of space per bird shouldn't rather be considered as cage birds!)

The statement that "the hen eats to satisfy her energy requirement" has served to illustrate an important biological urge. We must understand that it has definite limitations, as evidenced by reduced performance if feed consumption is limiting or problems associated with obesity if consumption is excessive. It seems that the application of a proper feeding program to fit a specific type of poultry operation over the next few years will tend to bring prescribed nutrition into daily feeding.


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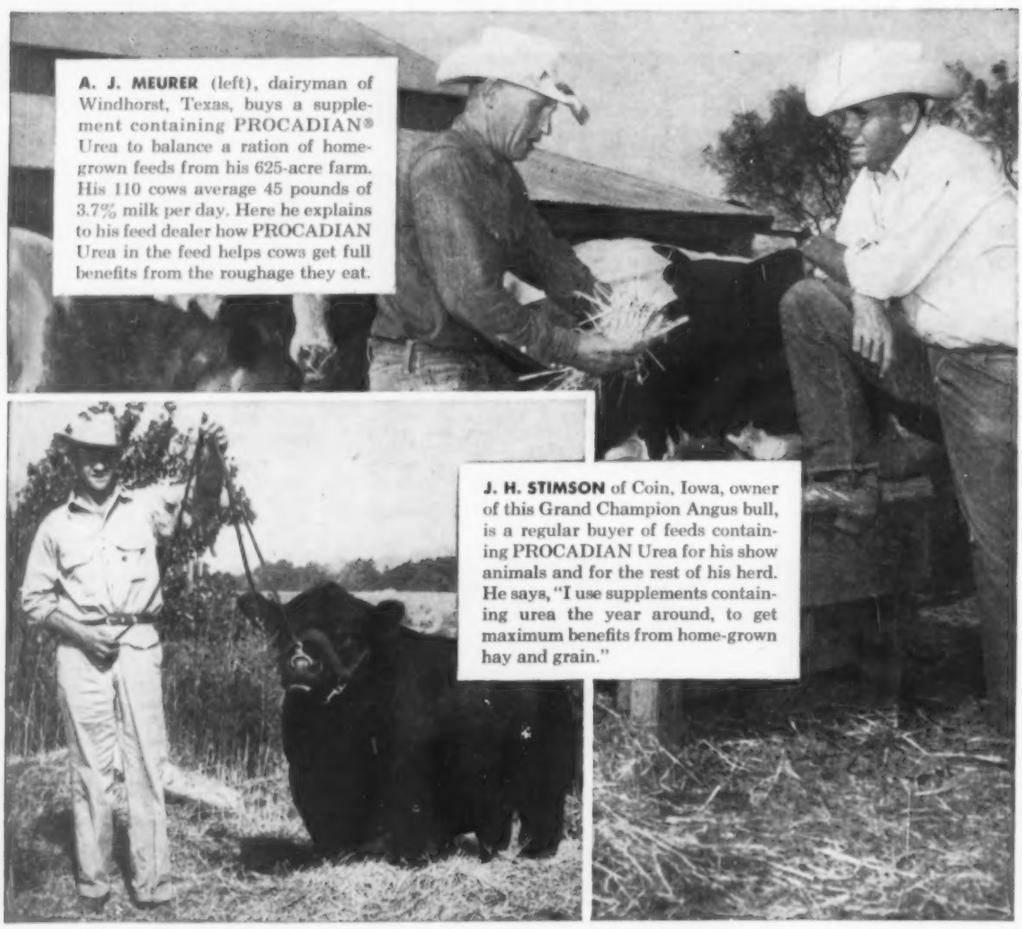
# These cattlemen specify "feed urea" in the supplements they buy



**A. J. MEURER** (left), dairyman of Windhorst, Texas, buys a supplement containing PROCADIAN® Urea to balance a ration of home-grown feeds from his 625-acre farm. His 110 cows average 45 pounds of 3.7% milk per day. Here he explains to his feed dealer how PROCADIAN Urea in the feed helps cows get full benefits from the roughage they eat.

**J. H. STIMSON** of Coin, Iowa, owner of this Grand Champion Angus bull, is a regular buyer of feeds containing PROCADIAN Urea for his show animals and for the rest of his herd. He says, "I use supplements containing urea the year around, to get maximum benefits from home-grown hay and grain."

*It pays to use* **PROCADIAN® UREA** *in your feeds*

**Thousands of farmers** know your high-quality feeds containing PROCADIAN Urea Feed Mixture are excellent for meat and milk production at a profit. This pure, easy-mixing source of protein is so concentrated that you have plenty of room in the bag to supply all the energy, minerals, vitamins and other essentials of a balanced cattle or sheep supplement. This helps the animals to get top feed value out of their entire ration. It pays to use PROCADIAN Urea in all your ruminant feeds. Order PROCADIAN today.

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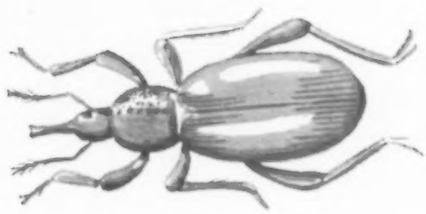
HOW TO MAKE STORED GRAIN IMMUNE TO BUGS

# Tetrakote Protects for 12 months or longer



It's so easy to apply TETRAKOTE to the grain as it goes into storage. Or you can even apply TETRAKOTE while you're turning the grain. When grain is resealed under government loan regulations is also a good time to TETRAKOTE.

Either way, you're getting long-term protection against bug infestation . . . a protection that is absolutely harmless to the eating, milling or germination qualities of the grain, when used as directed.

TETRAKOTE is a liquid grain protectant. It is easy to apply and may save you thousands of dollars in profit loss.

TETRAKOTE protects wheat, corn, and other small grains in storage. The success of TETRAKOTE has been proved again and again in elevators and flat storage, by farmers and seed houses.

When the golden flood of this year's harvest comes your way, protect it with TETRAKOTE.

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Due to the great demand, Douglas is continuing the free grain sanitation inspection service that won national acclaim in 1957-1958. You receive a complete inspection from headhouse to sub-basement and surrounding trackage. After inspection the Douglas Grain Sanitation Specialist analyzes and evaluates what he has found. He then gives you his recommendations for correcting your specific sanitation problem. There is no obligation—no charge. Get this coupon in the mail today.

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**620 East 16th Avenue, North Kansas City, Missouri**

☐ I want professional assistance with grain sanitation. Without obligating me, have your Specialist contact me.
☐ I would like to have the inspection made within 30 days _____ 60 days _____ (check one)
☐ Please Send Copy of 1959-60 Grainman's Insect Calendar
I am storing _____ bu. of _____ (kind of grain)

COMPANY NAME _____
ADDRESS _____
CITY _____ STATE _____
TITLE _____ SIGNED _____

## *Exhibit Space Sold Out for 43rd APHF Poultry Congress*

KANSAS CITY—All of the original space laid out for the 1959 American Poultry Congress & Exposition in St. Louis July 21-23 has been sold, according to Ed G. Gray, exhibit manager.

Sponsor of the event, at Kiel Auditorium, is the American Poultry & Hatchery Federation, Kansas City.

Exhibits from 155 firms will cover 95,000 sq. ft. of floor space. Nineteen additional firms have asked for space, and plans will be made to accommodate them.

Mr. Gray said the total number of exhibitors is not a record, but increased demands by a number of firms resulted in a space sell-out. The amount of space to be occupied will make the 1959 APHF meeting the largest industry display of equipment since the World's Poultry Congress in Cleveland in 1939.

The 1959 event will be the first meeting of the National Egg Council, the trade association for the egg industry.

Don Turnbull, APHF executive secretary, said between 4,000 and 5,000 hatcherymen, breeders, feed mixers and dealers, and producers are expected.

## George Gerstlauer Joins Haynie Products

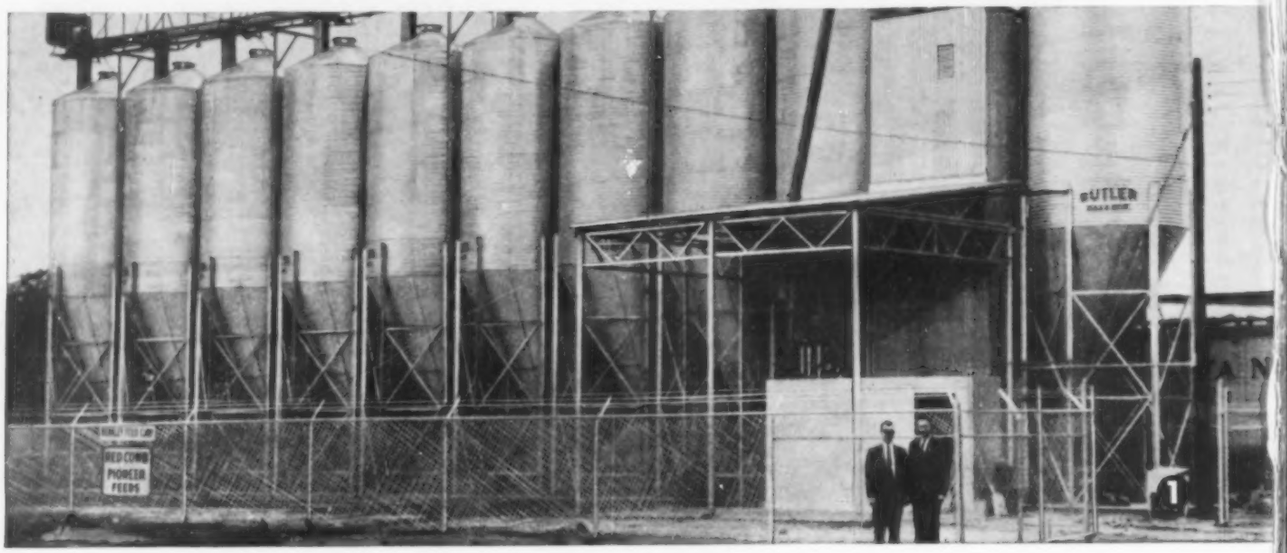
WILDWOOD, N.J.—Haynie Products, Inc., Wildwood, has announced the appointment of George Gerstlauer as assistant to Edward T. Casey, vice president in charge of sales for the firm.

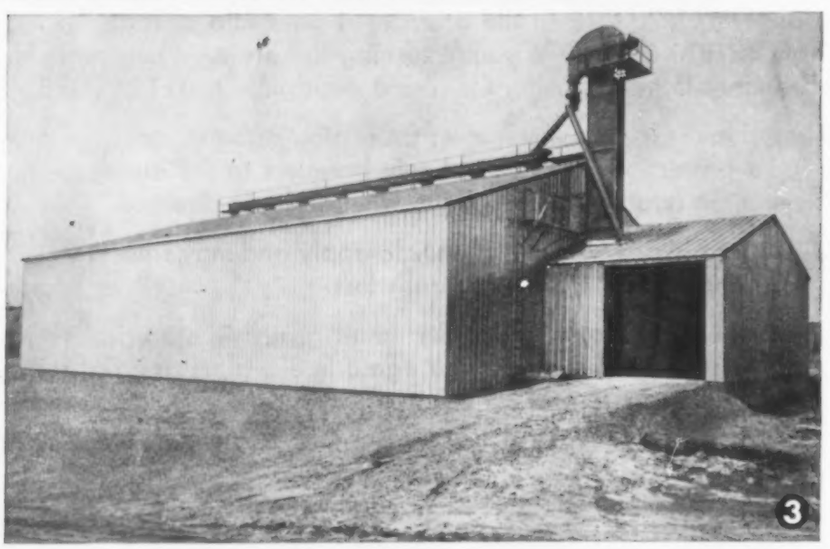
Mr. Gerstlauer, educated at Temple University, Philadelphia, was formerly with the Philadelphia office of Du Pont. He will headquarter in Wildwood and will replace Arthur Davis, who has been transferred to the refined oil division of Haynie Products. Mr. Davis will headquarter in Baltimore.

The announcement said Mr. Gerstlauer's principal assignment is to assist in the sales of products manufactured by Haynie's parent concerns.

### NEW OKLAHOMA HATCHERY

TULSA, OKLA. — Boston's Magic Empire Hatchery was opened here recently by Clay Boston, who operates a feed and hatchery facility at Carnegie, Okla. The new hatchery, associated with the DeKalb Agricultural Assn., will serve franchised DeKalb dealers in eastern Oklahoma. A DeKalb official said the hatchery was established here because of "the rapidly expanding poultry industry in this area."

# Profit-

1. **For profitable bulk feed handling** Red Comb Pioneer Feeds, Berkeley, Virginia installed this 280 ton Butler Bulk-O-Matic system. You, too, can boost sales . . . reduce operating expenses . . . increase your feed profits with push-button controlled Butler Bulk-O-Matic handling systems.

2. **Need volume storage** at low cost per bushel? This is part of a 5 million bushel Butler storage installation at Hastings, Nebraska. Each of the four Butler flat storage buildings in the foreground is 70 feet wide, 500 feet long and holds 650,000 bushels of grain.

3. **For fast grain handling** in any weather you can't beat this Butler grain storage installation in Oklahoma. Covered drive-through, made with Butler components, protects dump pit from weather. Vertical leg and roof auger on Butler building permits push-button loading.

4. **Need fire-safe vertical storage?** The Rosedale Grain Company of Rosedale, Indiana chose Butler round bolted steel tanks to hold down insurance rates . . . construction costs and maintenance expenses. Weathertight, rodent and insect-proof Butler tanks available in capacities from 1,297 to 123,364 bushels.

5. **Planning a feed processing plant?** Tindle Milling Company, Springfield, Missouri used Butler square bolted steel tanks to create this modern high-speed, batch-feed mixing plant. Hopper scales, mixers and the pneumatic handling system are push-button controlled for fast handling.




for dairy cows on an all-silage ration.

## Amended Indiana Feed Act Announced

INDIANAPOLIS — Indiana's feed act has been amended by the state legislature to define distributors and contract feeders, according to a recent announcement by the Indiana Grain & Feed Dealers Assn., Inc.

The association bulletin said the amendments "will greatly clarify the status of a contract feeder insofar as payment of the inspection fee is concerned." The new definitions are as follows:

"The term, 'distribute', means to offer for sale, sell or barter commercial feed or customer-formula feed; or to supply, furnish or otherwise provide commercial feed to contract feeder.

"The term, 'distributor', means any person who distributes commercial feed or customer-formula feed; or who supplies, furnishes or otherwise provides commercial feed to a contract feeder.

"The term, 'contract feeder', means a person, other than a person performing his duties as an employee of a distributor, who feeds commercial feed to animals pursuant to a contract whereby such commercial feed is supplied, furnished or otherwise provided to such person, and whereby such person's remuneration is determined all or in part by feed consumption, mortality, profits or amount or quality of product.

"The term 'person' means any individual, partnership, firm, corporation, association or agent."

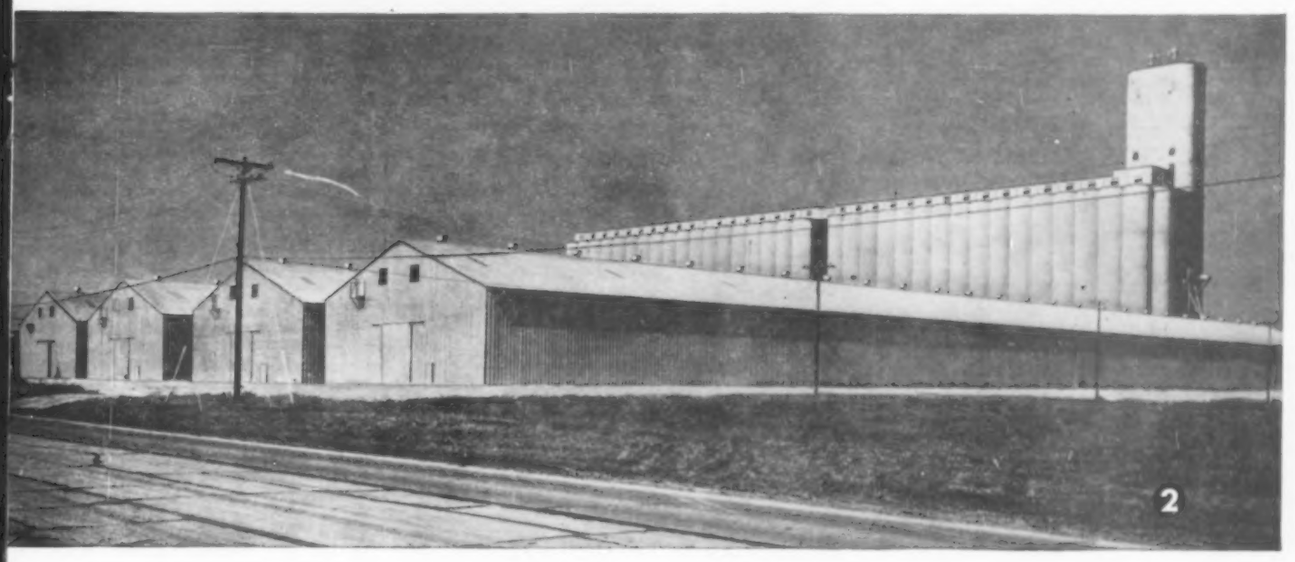
## Ohio Meeting April 23

FINDLAY, OHIO—Members of the Alfalfa Processors Assn. will meet April 23 at the Elks Club in Findlay, with a major portion of the program devoted to a discussion of all phases of Santoquin, an antioxidant, with representatives of the manufacturer, Monsanto Chemical Co., St. Louis. Members have been asked to invite their feed trade customers to the meeting.

## Sherwood Mills Names Manager of Division

BALTIMORE—Orrin J. (Jack) Bowling has been appointed manager of the small animal division of Sherwood Feed Mills, Inc., Baltimore, according to an announcement by Sherwood Dickinson, president.

Mr. Bowling will be concerned primarily with the marketing of Sherwood's new dog food. He has had 25 years experience in the food industry. For 16 years he was associated with Standard Brands as a sales representative. Before that he was associated with both the Acme and the Food Fair stores.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STORAGE STRUCTURES FOR GRAIN AND FEED

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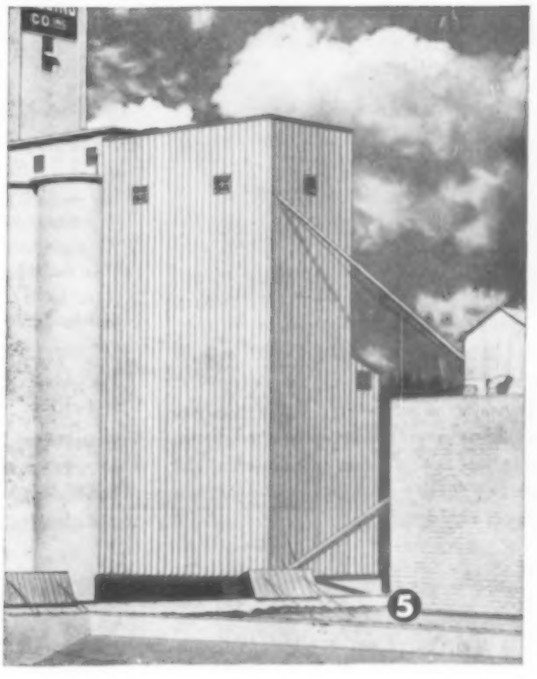
Butler's broad experience, its engineering talent and production facilities enable Butler's local storage experts to give you the benefits of the newest developments in feed and grain storage, drying and handling systems at lowest possible cost. You can select from Butler's complete line of all types of storage structures and be sure of getting the installation that best fits your needs and pocketbook.

Write us for complete details about any of the installations shown here or for catalog details on Butler storage structures.

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# Putting Research To Work

BY SPENCER H. MORRISON, PH.D., D. V. M.

### Corn Kernels in Feces of Dairy Cattle Fed Corn Silage

● C. F. Huffman and C. W. Duncan, Michigan State University Quarterly Bulletin, Vol. 41, No. 3, pp. 539-543, February, 1959.

**ABSTRACT AND COMMENT**

Dairymen often worry about the appearance of large numbers of what appear to be whole corn kernels in the feces when large amounts of corn silage are fed, and the consequent loss of nutrients. Previous work many years ago with open pollinated varieties of corn made into silage, showed that the actual loss of nutrients from this source was usually small—being in the neighborhood of 1.9-4.4%. With the use of hybrid corn, it is important to know whether or not this figure has changed to any extent—thus, the current Michigan work.

Three different lots of silage, made in different years (1954, 1955 and 1956) and using two different varieties (1954 and 1956, same variety, Michigan No. 480; 1955, Funk 85A) were fed for a 21-day period to determine the coefficients of digestibility for dairy cows on an all-silage ration. Fecal collections were made only for the last seven days, and there were four cows fed each kind of silage. The silages were described as being in the early-dent stage and were well-eared.

The mean of three hand-picked, 1 lb. samples of the various silages was used as a basis for estimating the total amount of corn kernels in each feeding of the silages. The kernels were also separated by use of a screen and water from fecal aliquot samples to determine percentage present in feces. Moisture determinations were made on the kernels obtained from both silage and feces, but chemical analyses were made only on one sample of silage (1954 sample).

A relatively small number of kernels were recovered from the feces of cows which were fed on the all-silage ration, ranging for the individual cows from 0.2% to 8.3%, with an average for all cows, fed all-silages, of 2.7%. The chemical analysis of the kernels recovered from the feces of those cows fed the silage harvested in 1954 revealed no significant change in chemical composition in the kernels as a result of passing through the digestive tract. It was pointed out that many people are often confused as to the actual percentage of corn kernels passing out in the feces, because of the appearance of fairly high amounts of corn bran in which the starch is completely digested.

It is also suggested that the reason why cows fed relatively large amounts of corn silage do not show large numbers of whole kernels in the feces as compared to those fed dry whole corn is because the kernels in the silage are high in moisture and entrapped in the roughage material. This mass is thoroughly mixed, regurgitated and subsequently thoroughly chewed — unlike whole grain which settles quickly and soon passes on to the reticulum, and thus through the digestive tract with little further action.

The loss of nutrients in sorghum

(Turn to RESEARCH, page 73)


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*makes the difference...*

*in your feed sales, too!*

Each day, more and more feeders are demanding DYNAFAC PREMIX in their feeds. They want every bit of advantage that modern agricultural science can offer—not just *some* of it!

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Feeders have discovered that DYNAFAC PREMIX helps produce beef at new record lows in cost/100 lbs. of gain. They've seen living proof in their own feedlots that DYNAFAC PREMIX gives them better protection, too, against Bloat and Founder. The *new* DYNAFAC PREMIX label lists *results you can expect to get* with dynafac:

**SWINE:**

1. For promoting growth and feed conversion.
2. For the control of scours of bacterial origin.

**CATTLE AND CALVES:**

1. For promoting growth, feed conversion, bloom, and on full feed earlier.
2. As an aid in minimizing the occurrence of feed lot bloat due to high consumption of concentrate.
3. As an aid in minimizing the occurrence of feed lot founder due to high consumption of concentrate.

**LAMBS:**

1. For promoting growth, feed conversion and on full feed earlier.

So, improve your sales position by giving your customers what they want . . . the leading, most talked about feed additive for 1959 . . . DYNAFAC PREMIX!

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Dynafac Premix is distributed nationally for Armour by the Chemical Department, McKesson & Robbins, Inc.

**GIVE HIM ADVICE HE'LL APPRECIATE**

*Remind him to order Morton T-M Salt. See page 77.*

**First place winner** in the heavyweight Shorthorn class was Rodney Weber of Geneseo, Illinois. Mr. Weber has fed cattle for the International Live Stock Exposition since 1947. Supplements with Stilbosol have been part of his fattening rations for the past two years. "I like to feed Stilbosol all the time my steers are on full feed. They stay on feed better, and," Rod said with a smile, "I sure don't object to the extra gains we get, either!"

On the day before awards were made, the judges were unusually strict in choosing carlots for the final judging. Mr. Weber, and three other Stilbosol feeders shown below, stayed in the running right up to the final selections.

*Lilly* **INTERVIEWS CARLOT FEEDERS AT THE CHICAGO INTERNATIONAL**

# Stilbosol-fed carlots score high in tense competition

**Roland Rabenold,** Ainsworth, Iowa, entered his first load of steers in the carlot competition. "Yes, I feed supplements with Stilbosol," he answered. "Started in 1955, and my cattle get quite a boost from Stilbosol . . . up to ½ pound extra per day, in fact." Then, as though answering an obvious question, "Of course I like it! I often feed it 220 days or more."

**"We count on Stilbosol** as a regular part of our feeding program," declared Hereford feeder Thomas H. Huston of Crawfordsville, Iowa. "The big reason we feed Stilbosol rations is for the extra ¼ to ⅓ lb. daily gain it adds. I estimate that Stilbosol cuts our cost of gain more than 10 per cent, and that's important."

**Hugh Morris,** of Bryn-Mawr Farm near Ainsworth, Iowa, brought his 26th carlot to the International. "These are my first Stilbosol-fed cattle," he explained. "I had heard so many good reports I decided to give Stilbosol a whirl. I'm very well satisfied with the extra gains. The cattle are quieter, too."

*Lilly*

MAKERS OF **Stilbosol®** (diethylstilbestrol premix, Lilly)
HYGROMIX® (*S. hygroscopicus* fermentation products, Lilly)
Procaine-Penicillin-G • Vitamin B-12

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The new HELM JUMBO MODEL 100 and JUMBO MODEL 60 give you increased pellet capacity, from poultry to cattle sizes.

• HIGH QUALITY

Firm, glossy pellets are an inherent feature of the HELM JUMBO MODEL 100 and JUMBO MODEL 60.

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The high capacity of these mills gives you the utmost in economy of operation.

• POSITIVE PELLET LENGTH CONTROL

A special feature of the HELM JUMBO 100 and JUMBO MODEL 60 is positive length control on all pellet sizes.

• EASE OF OPERATION

This custom designed mill has controls arranged to be easily operated from one position.

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When you sell RED W BRAND Meat and Bone Scraps, Digester Tankage, and Vitagen Feeding Fat, you're giving your customer the high energy feed he needs. RED W BRAND builds repeat business...puts meat on the animal, money in the till.

Animal Protein Concentrates and Vitagen Feeding Fat

The BEST Ingredients Make BETTER Feeds

RED W BRAND 50% Meat and Bone Scraps
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RED W BRAND Steamed Bone Meal
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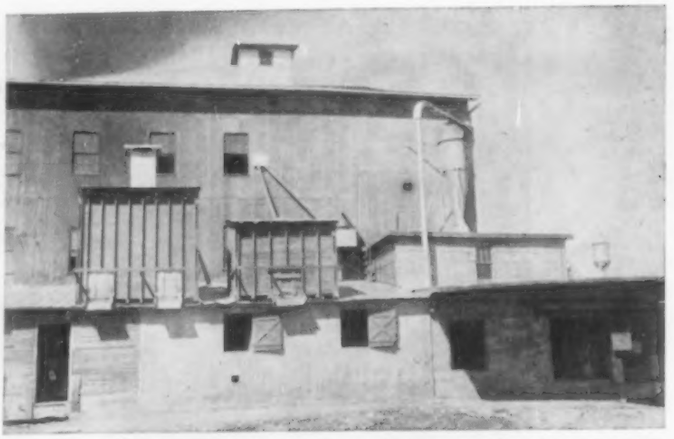

VIEW OF GARRARD MILLS—This Lancaster, Ky., feed and flour firm has completed several improvements recently and is planning more. One program now under way is the production of Landrace breeding stock for sale to farmers in its area.

# Firm Promotes Better Hogs By Raising Breeding Stock

**Hog raising program introduces better stock for farmers, leads to discussion about feeding and management and will eventually build more hog feed sales.**

By Al P. Nelson
Feedstuffs Special Writer

One way to get farmers to produce hogs that the consumer likes—hogs with more meat and less fat—is to conduct a personal campaign and to hold educational meetings on the subject. Another way is to encourage the raising of purebred meat-type hogs, or raise them yourself, if you are a dealer, and sell them to farmers.

This latter method is one which Mrs. Anita Moore, owner of Garrard Mills, Lancaster, Ky., and her manager, Lee Robinson, are using. The firm raises Landrace hogs on a lot at the rear of the feed mill, producing two litters a year from each of the three sows. The pigs are then sold at about 40 lb. for breeding purposes. The firm usually gets about $50 for each purebred pig.

"Farmers are interested in these pigs," reports Mr. Robinson. "They'll stroll back to look at them in the pen quite often, and one of us usually manages to go along. Then the farmers will start talking about meat type hogs and hog feeding rations, and that is where we come in. I think this hog raising idea is a mighty good business building idea for us, because many hog raisers talk about what we are doing. If, through this venture, we can get more farmers switched to meat-type hogs, we'll be well satisfied. We know that quite a number have already switched."

Mr. Robinson says that the firm has been raising Landrace hogs for about

BAGGING — Lee Robinson (left), manager of Garrard Mills, Lancaster, Ky., supervises bagging operations at the firm's Kelly-Duplex mixer.

GARRARD MILLS PRODUCTS—Mrs. Anita Moore, owner of Garrard Mills, Lancaster, Ky., looks over some of the products of the firm with the mill manager, Lee Robinson. The firm produces a "Glen Lily" line of feeds and flour.

# STABILITY

## A Superior Dry Vitamin A Feed Supplement

**PROVEN STABILITY:** Dawe's FIXTAY retains a high degree of potency over extended periods under normal and elevated temperature and humidity conditions. Even in high mineral mixtures, containing as much as 40% trace minerals, Dawe's FIXTAY maintained this remarkable stability:

| MIXTURE No. | No. 1 | No. 2 | No. 3 | No. 4 | No. 5 | No. 6 |
|---|---|---|---|---|---|---|
| Percent of Vitamin A remaining after 3 months | 98.6 | 97.8 | 95.4 | 98.6 | 95.6 | 95.4 |

**COMPLETE AVAILABILITY:** Biological tests prove Dawe's FIXTAY is fully available to the animal for early absorption in the digestive tract.

**UNIFORM DISPERSION:** Dawe's FIXTAY is of a particle size and shape which readily disperses and remains uniformly distributed.

Dawe's FIXTAY is available in all practical potencies. Write for samples and quotations on the potency of your choice.

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# IT HAPPENS EVERY DAY— Latest Rulings in Labor Relations

## CAN YOU DISCHARGE A UNION STEWARD FOR FIGHTING AFTER HOURS ?

YOU AIN'T BOSS NOW, TAKE THAT!
POW
SORRY SMITH, THIS ATTACK MEANS THE END!
PERSONNEL
CAN'T I RELAX AFTER HOURS ?
I HIT HIM AFTER WORK!
BECAUSE OF A WORK-TIME INCIDENT!
ARBITRATOR'S DECISION
YES, COMPANY MAY PROTECT SUPERVISORS FROM WORK-RELATED ASSAULTS.
Based on a 1959 Michigan Decision

two years and the impetus is growing. He thinks it is a program that the firm can continue for quite a few years. "When farmers get better prices for hogs that have more meat, then they are going to raise more hogs of this type, and it should mean locally that we'll sell more hog feed."

The firm handles Master Mix feeds and also feeds made by Aubrey & Co., Louisville (Red A). In addition it makes its own brand of Big G feeds.

Among the feeds made by the Garrard Mills are Big G 16% dairy, Big G pig and sow, Big G horse and mule and Big G scratch feed. The firm makes its own concentrate using a premix.

The firm operates on a modified grain bank storage plan, but is handicapped in this respect because it has only about 5,000 bu. storage capacity. More will be added, reports Mr. Robinson. Corn, oats and barley are the chief grains raised in this area.

To handle the grinding and mixing volume, the firm has the following equipment: One Jay Bee 100 h.p. mill; two two-ton Kelly Duplex mixers, and a Puritan molasses mixer. The mill has a daily capacity of 60-75 tons, but on small lots the output is about 30 tons less. Grinding prices are 20¢ cwt., and when dairy feed is mixed with molasses the charge is 30¢ cwt. Mr. Robinson says that Garrard Mills is the only plant in the country which makes complete rations for farmers, and this helps to draw trade from a wide area, he said.

Some hog raisers served by the firm have their own ideas of what they want in the way of rations. For

Steady Sales

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Good Profits

YOU GET ALL 3 ALL OF THE TIME

*when you push . . .*

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Consumption of PILOT BRAND Oyster Shell continues without interruption . . . day in and day out, every day of the year. Hens and turkeys, chicks and poults must have it because calcium carbonate is as important to their lives as water.

It is this constant use, plus the fact that pure, 100% usable PILOT BRAND is the largest selling eggshell material in the world, that causes progressive dealers everywhere to always stock and push PILOT BRAND as a matter of course. It always brings steady sales and good profits. And turnovers are so fast, you never have much money tied up in stock.

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PILOT BRAND OYSTER SHELL FOR POULTRY

Oyster Shell Products Company
Mobile, Alabama

GIVE HIM ADVICE HE'LL APPRECIATE

*Remind him to order Morton T-M Salt. See page 77.*

example, many like ground ear corn and supplement. The mill uses a ¼-in. screen on this grind. Others like a ration of finely ground ear corn and no supplement for heavy sows.

**Other Products**

In addition to making feeds, the firm also produces flour and finely ground cornmeal. These products, properly bagged, are sold to stores along four different routes in the county. The volume of business achieved on these products is steady, and it accounts for a high percentage of business.

While the firm does not have a pellet mill, it does sell quite a few sacked pellets and crumbles. In addition to selling quite a tonnage of hog feeds, the firm also supplies many owners of laying flocks, a number of whom like the crumbles.

"We are studying the bulk delivery idea," states Mr. Robinson, "and we feel that we will soon be into it. This will give more service to our customers and will also enable us to sell and deliver sizeable feed tonnages to customers farther out in our trade area. In fact, we are always studying means by which we can be of greater service to customers in the face of rapidly changing feed and farm conditions."

The feed manufacturers from whom this mill buys bagged materials also aid in the staging of occasional feeder education meetings. Such meetings are usually held at a local hall. The farmers who attend are given a meal, and then follow some movies and talks about feeding. Usually there is a prolonged question and answer period where farmers can ask about individual feeding problems.

Mr. Robinson manages to find time in a very busy schedule to visit many of the mill's customers. He finds that discussing feed problems right on the spot with individual farmers is an excellent way in which to get to know them better, learn of their special feed problems and to sell them eventually on the Garrard Mills feeding program.

"While we may not do as much newspaper and direct mail advertising as some feed firms," he pointed out, "we do a lot of educational work through our feeder meetings, through personal visits and by our purebred pig raising program. These ventures give us the opportunity to have face to face discussions with many feeders, and this is valuable in building our business."

## Rutgers Economists Studying Integration

NEW BRUNSWICK, N. J.—A team of agricultural economists at Rutgers University's College of Agriculture is making a special study of vertical integration in New Jersey agriculture.

Dr. George W. Luke, chairman, department of agricultural economics, has announced that the project has been started "to take a close look" at contract farming.

Assigned to the project are Ronald O. Aines, assistant research specialist, who is handling investigation of the farm management aspects of integration; Dr. A. Robert Koch, newly appointed assistant professor who is looking into marketing and distribution phases, and Charles P. Logg, Jr., a research fellow.

## *Farm Editor Writes 'The Sheep Book'*

NEW YORK—"The Sheep Book," which discusses all phases of the sheep business, has been published by John Wiley & Sons, 440 4th Ave., New York. The author is John McKinney, associate editor, The Progressive Farmer, Memphis office.

The book, according to the publisher, devotes material to buying, feeding, lambing, "doctoring," grading, selling and other aspects of lamb raising. It also includes many pictures taken by the author, primarily for purposes of instruction. One chapter offers instruction in how to train a sheep dog.

Mr. McKinney has taught vocational agriculture, and was with the U.S. Department of Agriculture for seven years before assuming his editorial post.

His 295-page book is priced at $4.96.


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# Effects of Caloric Restriction in Feed Principal Discussion at Texas Cage Clinic

By Special Correspondent

COLLEGE STATION, TEXAS — Various methods of caloric restriction in pullet growing feeds—and its effect on laying house performance—were principal subjects, at the recent annual Cage Clinic at Texas A&M College.

Dr. J. H. Quisenberry, head of the college's poultry science department, summarized past research into mechanical restriction and discussed current work in the use of added fiber in the ration to achieve the same result.

Generally speaking, his results showed that energy restriction methods produced favorable responses in production and mortality, but noted that birds on a high-fiber diet would eat more total feed. He said economic aspects of such a feeding program must be worked out for each producer-feed dealer relationship, before such a program's true value can be estimated.

(See Table 1, page 44. In second column, "C.C." means colony cages, "I.C." means individual cages and "Comb." is the total average of both colony and individual cages. The basal ration contained 17.2% protein and 4.23% fiber, and had 927.3 calories per pound.)

Dr. Quisenberry said that another factor deserving consideration in the high-fiber diet question is that droppings from high-fiber diet birds are drier than those from mechanically-restricted birds, and that the drier droppings offer a distinct advantage in fly control.

Commenting on colony cage methods for both pullet and egg production, he said the major advantages claimed for colony cages include: Lower housing costs, about half that of housing for individual cages; more efficient use of labor, since one man can handle twice as many birds as in individual cages or floor units; make possible economical use of mechanical equipment for feeding, watering and egg gathering; may be used for raising replacement pullets, lending flexibility to both the pullet-growing and egg production operations, and permit year-around pullet production, if needed.

Disadvantages listed by Dr. Quisenberry include: Cannibalism, increased fly problems, increased numbers of dirty and broken eggs, some possible reduction in egg production and social competition between birds. In a half-humorous comment about social competition—which is known to affect egg production directly—Dr. Quisenberry raised the possibility of tranquilizing products, already under test usage, and alcohol.

"The cocktail hour seems to promote more agreeable social interchange among humans — why not among hens?" he asked. Then he noted the energy content of alcohol and fat.

Summing up his comments, he said, "In colony cages, as in any system of housing birds for egg production, management is the key to success or failure. Because of the extreme crowding in colony cages, management is perhaps of even greater importance than in other management systems."

### Pullet Health

Bob Griffin of Kazmeier-Sherrill Hatchery, Naples, Texas, spoke on "The Tenets of a Sound Started Pullet Program," and opened his talk by daring the audience to raise a No. 1 flock of pullets without a death loss.

"Yet it's not impossible," he said. "Supervision and care are the answer. You can't consider a bird's laying life without also considering what happened to that bird during its starting and growth periods. The most important three items are intestinal health, habits the birds develop and nutrition.

"For health, dilute contaminating sources by thoroughly cleaning and disinfecting brooders and houses. Watch your birds, and when they get sick, find out what's wrong. 'Post' every hen that dies, and see why—then treat!"

Mr. Griffin advised the grower to develop good habits by starting with at least an inch of feeder space per bird, and increase it 1 in. per month until 6 in. is reached. "For water space," he said, "start with 20 linear inches per 100 birds, then move to 40 in. and to 60 in. for adults. For floor space, start with 2 sq. ft. per bird. Baby chicks won't use it, but it's there when they do need it—and they will!"

Mr. Griffin reported that his company found that on one-time-a-day care, it received 219 eggs per hen, lost 18% to death and culling and had 66% production on a hen-day basis.

"On twice-a-day care," he said, "we got 229 eggs per hen, lost 10%, and got 67% production. But on three-times-a-day care, we got 240 eggs per hen, lost only 4%, and got 73% production.

"For nutrition, we find we need a complete, highly fortified feed. We use chick grain and grit, and start them at 48 hours. Until they're 8 to 10 weeks old, we use an 18% starter, then switch to a 17% grower and full-feed with it. We've had good luck."

Mr. Griffin said he prefers mash over crumbles. "It's cheaper, and it keeps them busy," he said. "There's no pecking or cannibalism. We had to debeak crumbles-fed birds.

"Whatever feed you use — follow the manufacturer's specifications. He made it, and knows how it should be used. Let birds run out of feed two or three times each day. That way they clean it up and it'll mean several dollars in the laying house."

Dr. J. Clyde Driggers, professor

Morton T-M Salt. See page 77.

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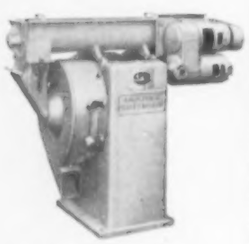

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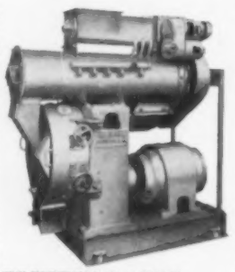

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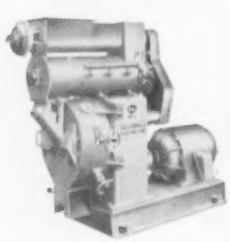

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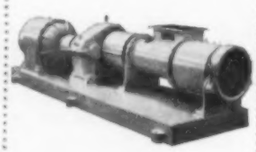

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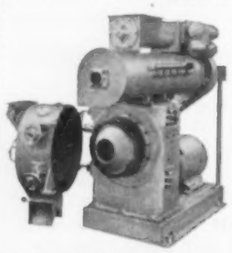

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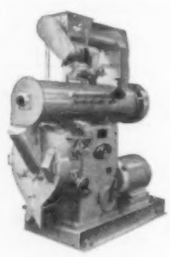

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**TABLE 1. Summary of the Effects of Five Rearing Rations on Laying House Performance of a Commercial Egg Production Stock Presently Located in Colony Cages and Individual Cages; Periods I-IV, Sept. 1, 1958, Through Dec. 22, 1958**

| Rearing diet | Laying house | Average initial weight 9/1, gm. | Average wt. gain gm. | No. hens 12/22 | % prod. H.D.B. | Av. egg weight gm. | Percentage of total eggs in ounces per dozen groups 24+ | 22-23 | 20-21 | 18-19 | 17— | —Lb. feed/— lb. eggs | doz. eggs | Per cent Mortality |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Basal | C.C. | 1386.7 | 362.5 | 136 | 67.20 | 53.73 | 32.8 | 34.7 | 24.9 | 7.8 | 0.77 | 3.07 | 4.36 | 6.20 |
| | I.C. | 1328.0 | 405.8 | 40 | 74.80 | 53.58 | 32.0 | 32.1 | 26.6 | 8.9 | 0.36 | 3.01 | 4.26 | 0.00 |
| | Comb. | 1374.0 | 371.7 | 176 | 68.90 | 53.70 | 32.6 | 33.3 | 25.3 | 8.1 | 0.67 | 3.01 | 4.34 | 4.86 |
| Basal restr.* | C.C. | 1272.6 | 600.2 | 45 | 62.30 | 54.10 | 35.4 | 37.1 | 21.1 | 5.7 | 0.71 | 3.12 | 4.46 | 10.00 |
| | I.C. | 1252.3 | 512.3 | 39 | 69.50 | 54.98 | 45.6 | 31.6 | 16.9 | 5.5 | 0.52 | 2.99 | 4.34 | 2.50 |
| | Comb. | 1263.4 | 559.9 | 84 | 65.60 | 54.53 | 40.4 | 34.4 | 19.0 | 5.6 | 0.62 | 3.05 | 4.40 | 6.67 |
| 12/15** | C.C. | 1343.8 | 445.9 | 139 | 63.28 | 53.97 | 34.6 | 36.7 | 21.6 | 6.5 | 0.61 | 3.32 | 4.74 | 6.71 |
| | I.C. | 1295.4 | 489.1 | 80 | 73.22 | 54.11 | 37.3 | 34.1 | 21.3 | 6.5 | 0.73 | 2.95 | 4.22 | 0.00 |
| | Comb. | 1326.9 | 467.2 | 219 | 66.80 | 54.03 | 35.7 | 35.7 | 21.4 | 6.5 | 0.65 | 3.17 | 4.53 | 4.37 |
| 15/15** | C.C. | 1344.3 | 482.9 | 145 | 66.90 | 54.78 | 39.4 | 33.3 | 21.1 | 5.7 | 0.49 | 3.05 | 4.42 | 1.36 |
| | I.C. | 1240.1 | 522.5 | 79 | 71.10 | 54.21 | 39.3 | 34.0 | 19.4 | 6.6 | 0.72 | 2.99 | 4.28 | 1.25 |
| | Comb. | 1307.6 | 496.6 | 224 | 68.40 | 54.57 | 39.4 | 33.5 | 20.5 | 6.0 | 0.58 | 3.03 | 4.37 | 1.32 |
| 18/15** | C.C. | 1336.2 | 442.2 | 138 | 67.30 | 54.31 | 36.8 | 34.0 | 22.2 | 6.2 | 0.81 | 3.08 | 4.42 | 8.00 |
| | I.C. | 1262.5 | 494.4 | 79 | 72.60 | 55.15 | 45.4 | 31.7 | 17.3 | 5.0 | 0.59 | 2.89 | 4.21 | 1.25 |
| | Comb. | 1310.5 | 460.1 | 217 | 69.20 | 54.62 | 40.0 | 33.1 | 20.4 | 5.7 | 0.72 | 3.01 | 4.34 | 5.65 |

*Feed restricted to 10 lb. feed per hundred birds per day.
**12%, 15% and 18% protein, 15% fiber, respectively.

and chairman, poultry division, University of Georgia, told the 600 conference participants, "Energy and protein requirements of hens depend on two types of factors: (1) Genetic, which includes size of the bird, egg size, feed efficiency and body heat requirements and (2) environmental, which includes lighting, temperature, water, disease and nutrition."

"Seasonal efficiency of the same feed," he said, "even in heated housing, drops in cold months as compared to warmer months."

Dr. Driggers recommended .625 gm. digestible protein per pound of body weight per day, and 12⅓ gm. per egg, regardless of size. "Higher energy content in feed shows a steady efficiency gain," he said. "Heavier birds require more energy, and the higher the energy content of your feed, the less feed is needed per dozen eggs."

For birds working at or above 85% production, he recommended a feed with 800-1,000 calories per pound, and at least 16½-17% protein. For lightweight birds on high-calorie feed, he recommended 17-17½% protein at least.

"For older birds, watch production and reduce both energy and protein accordingly," he said. "In hot weather, decrease calorie intake and increase protein. In winter, reverse the process. With higher body-weight birds, you require less protein per calorie than with lighter birds."

### Contract Production

In another talk, Dr. Driggers said, "Contract production can be good. But if it's unrealistic, it can be financial ruin to everybody. Any time there can be benefit in efficiency and output—and if we as cage producers can benefit from it—then I say that everyone can benefit."

In outlining what an egg contract should contain, he said the contractor generally supplies the chicks, feed, medication, egg cases, and—usually—the market. "He also should provide some form of remuneration to the producer," Dr. Driggers commented. "The producer," he said, "should provide houses, equipment and labor."

### More in Cages

It was reported that the number of laying hens kept in cages in Texas continues to expand. Estimates of county extension directors indicate that the number in 1958—3,556,000—was 13 times greater than that reported in 1953—272,000. The estimate was 901,000 for 1954; 1,243,000 for 1955; 1,647,000 for 1956, and 2,406,000 for 1957.


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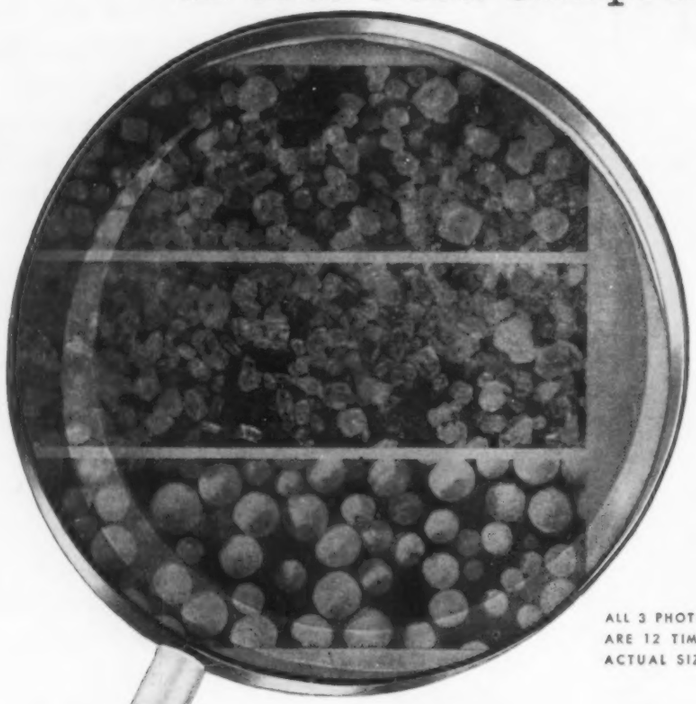


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## California Grain Men Outline Attitudes on Clean Grain Inspection

SAN FRANCISCO—The views of the grain industry toward the clean grain inspection program and other matters relating to the grain industry were expressed by four representatives speaking at a recent meeting of the central California agricultural inspection program recently.

The four men gave their ideas to the inspectors in an "educational" program. According to Jerry Swendsen, Continental Grain Co., the grain comes in at harvest in a large volume and the county inspector makes his inbound inspection rapidly. Mr. Swendsen said that the clean grain is stored separated from the red tag, and later in the season, on loading out of the elevator, only a few trucks go out at a time, and the inspector makes a thorough investigation and may find a noxious weed which he may have missed on the inbound inspection.

The strict observance of the law leaves little security for the warehouseman, and the condition of his inventory, according to Mr. Swendsen.

Jack Schuler, E. D. Wilkinson Grain Co., speaking from a merchandising viewpoint, said strict application of the weed control law appears to put the burden of controlling weeds in the state upon the grain shippers and merchandisers whereas, in fact, it should rightly belong on the ranch at the point of origin.

He said the unequal administration of the laws between the counties has made an area of uncertainty in the grain business. It should not be the purpose to try to control the weeds overnight, but a tolerance of weed seeds should be allowed and then in time it could be tightened as the farmers begin to clean up their fields, he said.

A farmer who represented the growers, pointed out that if the county commissioners were able to force the Fish & Game Commission to prevent the ducks and geese from visiting the ranches and leaving weed seed wherever they stop, and if the commissioners further could prevent the water bureau from sending weed seed down in the irrigation water, then the commissioners would be justified in their tough approach to clean grain. But otherwise, according to the farmer, the measures made little sense to him.

Orval Vaughan, of the bureau of plant quarantine of the California State Department of Agriculture, moderated the discussion. He explained that the entire purpose of the weed control laws is to help the farmer. But it is difficult, he said, to help the farmer if he won't clean up his own fields.

"We still want to know if the farmer wants the protection," Mr. Vaughan said. "Actually, we are 50 years too late, and the question has been 'where do we start?' The grain industry has carried the burden by itself, and it has harassed its members."

Mr. Vaughan suggested that the next regulatory measure should take the burden off the industry and shift it onto the farm, which was the original intention of the program.

The original clean grain laws, passed upon the application of various county agricultural commissioners, had previously been discussed by the latter group. Putting the burden onto the grain shippers was to some extent a compromise inasmuch as the commissioners did not wish to accept the responsibility for enforcing the laws against a ranch or farm, as originally proposed.

## *Phenothiazine Study Results Reported*

BERKELEY, CAL. — University of California scientists have reported that the worm-killing efficiency of phenothiazine in lambs drops to zero when the dosage is stretched out for seven days.

In comparative tests on the Davis campus, 25-gm. doses of phenothiazine were given to four groups of lambs. The drug was rated 65% efficient when the whole dose was given in one day; 46% efficient when spread over three days; 32% efficient over five days, and 0% efficient over seven days.

This report, it was noted, contradicts some recommendations that advise dividing the dose into two, three or four portions.

The Davis scientists who cooperated on the experiment are Dr. James R. Douglas and Dr. Norman F. Baker of the School of Veterinary Medicine and Dr. William M. Longhurst, who is attached to the university's Hopland Field Station.

## Straw Sun Shelter Keeps Pigs Cooler

DAVIS, CAL. — The value of a straw shelter in keeping pigs cool while a hot sun bears down has been demonstrated in experiments conducted by University of California agricultural engineers.

T. E. Bond and C. F. Kelley reported that a straw sunshade 4 ft. high offered better protection from the sun than all other materials tested. The calculated gain for the straw-shaded pigs, they said, was 1.35-1.75 lb. daily, compared to 1.20-1.63 lb. for the next best materials, such as aluminum or plywood.

Mr. Kelley and Mr. Bond are testing other methods of cooling pigs, including water sprays and air conditioners.

## Encephalitis Warning

DAVIS, CAL.—University of California veterinary scientists have reported that a new form of encephalitis has taken the lives of about 75 cattle at a feedlot in Contra Costa County. Dr. Peter C. Kennedy said the epidemic began in October and is still on. Cattlemen were warned to contact their local veterinarian at the first sign of the disease.

**NEW ELEVATOR IN TEXAS**

BRECKENRIDGE, TEXAS—The Kimbell Milling Co., Ft. Worth, is constructing a 50,000-bu. grain elevator here, which will start operations about May 15. It will supplement the old elevator which has a capacity of 7,000 bu.


NEW...

MID-STATES *Mobile* EAR CORN PROCESSOR

Unit is available as shown above with 14" by 28" crusher and dual mounting of 9" by 28" grain rolls . . . or with 14" by 16" crusher with single grain roll.

CHECK THESE FEATURES:

★ ear corn crusher head

Rugged, durable crusher is powered by truck engine through a split shaft drive. Also available with separate industrial engine drive.

★ grain roll

The Universal Grain Roll shown on opposite page is the unit used on the mobile processor.

★ auger feeder

Feeds ear corn or grain into unit. Extension drag ear corn feeder available for feeding out of cribs.

★ 8" by 15' unloading auger

Designed for easy reach into bins.

Manufactured under contract exclusively for Mid-States by

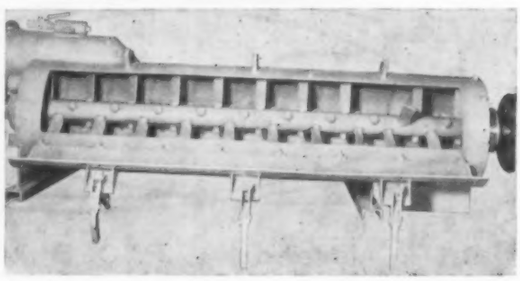
STAVA MFG. CO.

Wahoo, Nebraska

profit makers

NOW YOU CAN ROUND OUT A COMPLETE ON-THE-FARM FEED SERVICE WITH THIS HIGH EFFICIENCY UNIT

★ high speed molasses blender



Continuous flow blender is efficient, easy to clean. Equipped with percentage feeder for adding supplements. Worthington molasses pump, Buffalo large-face 2-hand meter. Heated molasses tank.

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MOOERS MFG. CO. WINDOM, MINNESOTA

**PURINA PROMOTES FARM PRODUCTS**—The traveling sign atop the Ralston Purina Co.'s new headquarters building shown in the photo at left and the consumer promotion display window in the lobby of the new building shown in the picture at right promoted consumption of eggs during the month of March. The traveling sign and the window are used to promote the consumption of meat, milk and eggs. During January, beef was promoted. In March it was eggs. June will feature milk; July, chicken; October, pork, and November, turkey. Approximately two million persons see the traveling sign each month.

## *Urea-Containing Feed Discussed*

UNIVERSITY PARK, PA. — Dr. Richard S. Adams, dairy extension specialist, Pennsylvania State University, commented recently that many dairymen still are reluctant to use urea-containing feeds, even though, in his opinion, they "could reduce their feed costs by using a high quality, urea-containing supplement" with their farm-grown grains.

"This fear of formula feeds with urea is largely unfounded today," he said. "Actually, it is being dispelled by the satisfactory performance of such feeds made by reputable feed manufacturers."

Dr. Adams believes that possible toxic and other adverse effects of urea on the health of cattle "have been grossly emphasized."

A number of good quality, commercial supplements with urea are being sold, he said. When oil meals are high in price, urea-containing supplements are often cheaper sources of protein equivalent, Dr. Adams advised.

He also commented on liquid supplement which consists of molasses, alcohol, minerals and urea. "Generally it contains at least 30% protein equivalent," he said. "While it may find increased use among beef feeders, the feeding of a liquid supplement to dairy cows appears limited largely to loose-housing conditions at the present."

"Recent research and field observations suggest that this liquid supplement should be considered as any other good quality, 30-32% supplement when normal types and qualities of roughage are fed to dairy cattle. There are some indications from research still in progress that the liquid supplement may have somewhat greater value than its protein equivalent content indicates, if cattle are fed poor quality roughage. Many dairy cows would need only 2 to 4 lb. of the liquid supplement daily to balance their protein needs. Considerably more is sometimes consumed if intake is not limited or closely watched."

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WASCO, CAL.—The Wasco Feed & Supply Co. has been formed here by Carl B. Roderick and Wilma L. Young.


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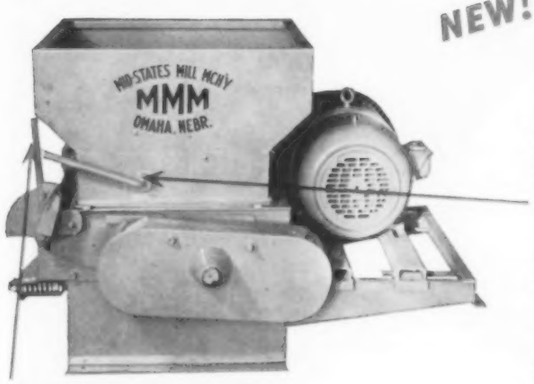
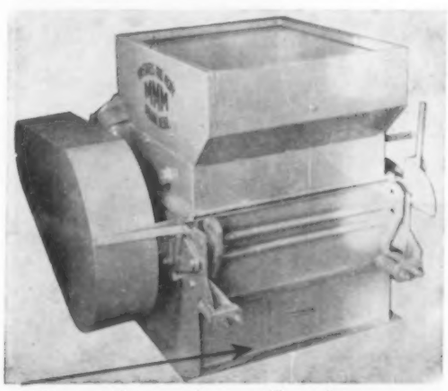



★ **roll adjustment lever**

Simple cam-operated roll adjustment lever.



★ **inspection and sampling door**

Convenient door makes quality check possible immediately below rolls.

★ **capacities are:**

600-1000 bu./hr. on shelled corn
200-300 bu./hr. on oats
200-300 bu./hr. on milo
300-400 bu./hr. on barley

★ **hopper gate control**

Friction lever control makes for accurate feeding of rolls and control of texture.

★ **exclusive roller design**

With the QD-F tapered hubs fitted to the roll the 2¼" stress-proof shaft can be removed with ease to allow annealing, regroov.ng and rehardening of roll shells. Also means lower investment in "spare rolls."

★ **cross section view of 9" by 28" roll**

Rolls are manufactured from stress-relieved tubing having wall thickness of 0.75 inch. Standard production of rolls is 6 grooves per inch. Available in groove range of 4 to 16 grooves per inch.

★ **heavy duty construction**

Built for years of trouble-free service.

★ **full-width magnet**

Reduces roll damage and possibility of "hardware disease."

★ **long roll life**

Rolls are precision hardened in Omaha Steel Co.'s modern metallurgy plant. Exclusive design saves roll replacement time.

★ **roll replacement plan**

Assembled roll exchange plan reduces "out of service" to approximately one hour.

★ **Universal motor base**

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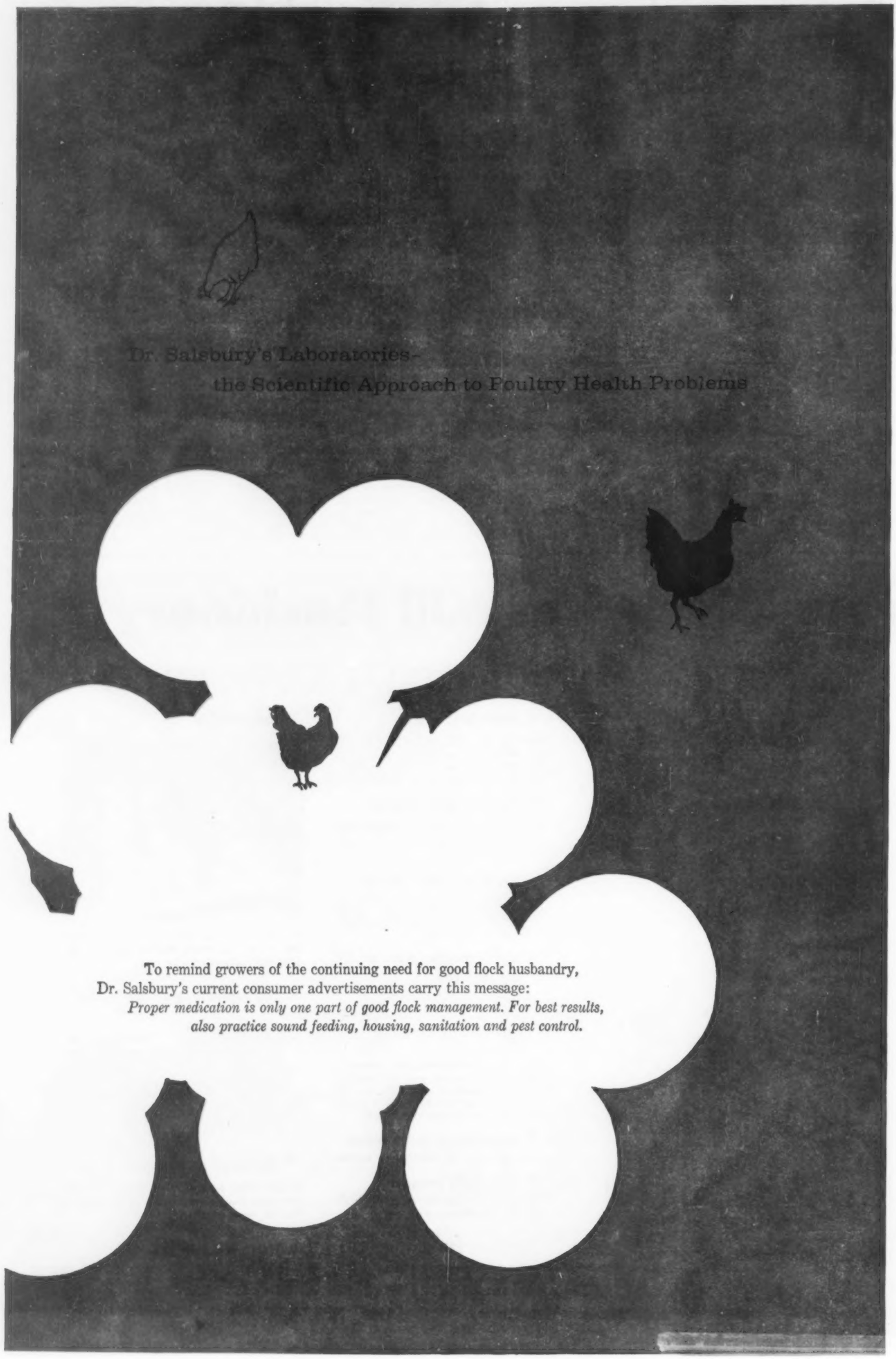
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To remind growers of the continuing need for good flock husbandry,
Dr. Salsbury's current consumer advertisements carry this message:
*Proper medication is only one part of good flock management. For best results,*
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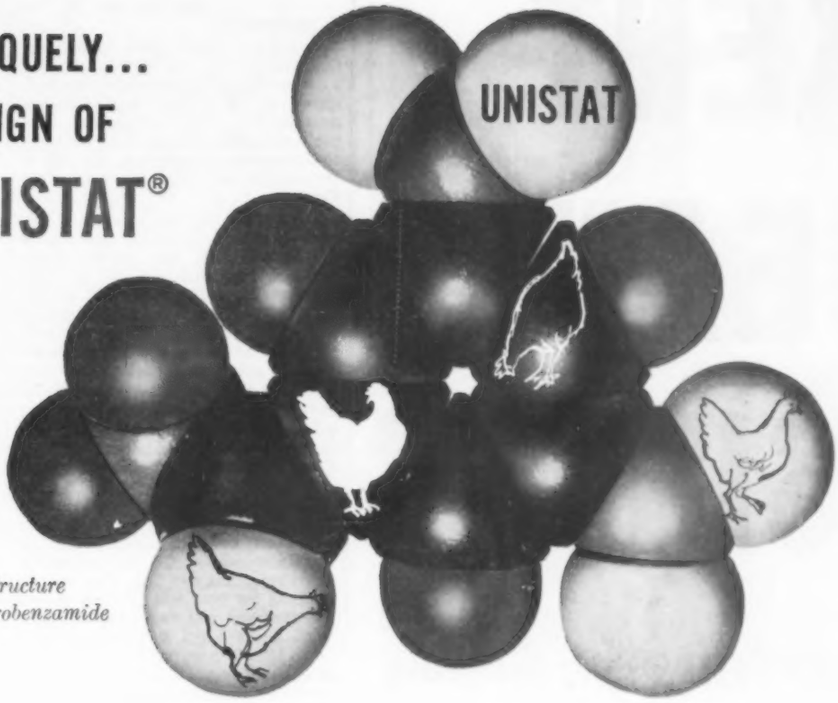


*Molecular structure of 3,5-Dinitrobenzamide*

# More Than Just A Superior Coccidiostat ...Unistat Has The Profitable "Extras"!

The molecular structure above is that of 3,5-Dinitrobenzamide—the organic compound that helps in making UNISTAT so highly effective against the major species of coccidia.

However, UNISTAT's formula also includes Acetyl-(para-nitrophenyl)-sulfanilamide to promote broad-spectrum coccidiosis prevention, and 3-Nitro-4-hydroxyphenylarsonic acid for *growth stimulation, increased feed efficiency,* and *improved pigmentation*—the profitable extras in poultry production.

There are many coccidiostats available today. However, few offer you the profit-making extras. This is the reason Dr. Salsbury's UNISTAT is rapidly becoming *the number one coccidiostat in America.* Smart poultrymen know these extras pay off in cash returns.

By blending small amounts of UNISTAT in your feeds, you're offering your customers low-cost protection against coccidiosis . . . PLUS . . . you're adding those sought-after extras to your feeds. You're creating good will and confidence among your customers . . . another unseen ingredient every successful business needs.

Cash in on this growing demand for UNISTAT. Write, wire or phone for more detailed information . . . or, place your order today.

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Kent Feed dealers know from experience what a Kent-planned sales promotion program can do. Increased sales, increased profits, new customers testify to success. Kent Feed dealers themselves had this to say about Kent-sponsored promotions . . . "The results were great. We sold 184 tons and got a lot of satisfied customers" . . . "Kent's program paid off with 240 tons sold in three days" . . . "We sold 194 tons in one day thanks to Kent."

**Kent will do it for you**

What the Kent Sales Promotion Programs have done for other Kent Feed dealers they can do for you. Kent salesmen are experts at planning these special events. They'll work with you every step of the way to insure profitable results. And all this extra help from Kent is absolutely free. In addition, Kent salesmen help you call on customers, sell in the field and help you build a profitable business based on customer satisfaction.

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Sales help is just one part of the Kent Program. An effective dealer co-op advertising program tells customers about Kent Feeds in the dealer's area. Local radio, television, newspapers and direct mail are used extensively to tell feeders that you are the Kent dealer. And Kent's continuing research program assures you of the very highest quality feed, thoroughly tested and proved.

*If you're interested in making more profit, write us for complete details on KENT FEED franchise for your area*

KENT FEEDS
"THE FEED WITHOUT A FILLER"
Muscatine, Iowa • Sioux City, Iowa


# Letters to the Editor

## Country Ham

Morgantown, W. Va.

**To the Editor:**

In a recent issue (Feb. 7) of your fine magazine, I was alarmed to find a rather despairing editorial note dedicated to the country ham. I was heartened to note, of course, that the notation was applied particularly to Tennessee country ham and not to the superb hams produced in West Virginia.

To set the records straight, however, I though it fitting and proper to tell you that the country hams that are produced and sold in most areas of West Virginia are true delicacies. They represent very careful curing and to the discriminating palate are almost beyond compare. Gourmets of celebrated background consider the dried, cured, aged, country ham to be insurpassable.

It is possible that these superlatives are of little meaning to you and I would like to invite, therefore, your participation as an active bidder for one of the excellent hams which will be offered for sale in the various ham and bacon sales to be conducted by our Extension Staff. I will personally guarantee that the ham that will be selected for you, will be sent to you and that you will find it beyond criticism. Such hams usually command about $1.50 per pound and if you would like to participate in this program, I will be most happy to honor your request.

**G. C. Anderson, Head**
**Animal Husbandry Department**
**West Virginina University**

(EDITOR'S NOTE: The editorial referred to was not intended to despair country ham, of course, and we think Prof. Anderson actually had his tongue in cheek in dictating the first paragraph above, which is where ours will be until we can get our teeth into the ham for which we asked him to bid us in.)

• • •

## Price Supports

Douglassville, Pa.

**To the Editor:**

Your editorial on price supports in issue of Jan. 31 should be posted on the wall of every business concern connected with the feed or grain business in letters an inch high, but I would like to see them carried on a little farther. I do not have the latest figures on the number of earners in this country, or perhaps number of taxpayers would be better, but would like to know how it comes out per capita for the people who have to pay it.

What the average person does not seem to understand is that while modern methods may be able to reduce the cost of raising a pig, if no one wants, or needs, that pig, it will ruin not only its own value but that of every other pig. In other words, increasing production without regard to consumptive demand can have but one result, and I don't have to tell you what that is.

The old simple law of supply and demand still works—100%.

**D. Arthur Karr,**
**Animal Nutrition,**
**Douglassville, Pa.**

• • •

## Seeks U.S. Job

Paris, France

**To the Editor:**

During the course of October the last, I attended a lecture, the subject of which being "Cattle Feeding in the U.S." I was very much interested in it, and it incited me to want to increase my experience in the new American technical and commercial novelties.

I possess my "Baccalauréat" and I am presently attending my second year in a commercial high school in the "marketing" department.

Besides, I have worked two years in a firm which produces cattle food and which verifies experimental breeding. I successfully filled several posts in this firm.

Would you be so kind as to let me know if you can get one or two "probations" in a cattle food manufactory. I shall be free during about five months, from August to December.

In a positive case, what are the conditions or please give me the address of the firm where I can write.

**Monsieur A. Verrier,**
**199, Faubourg St Honoré**
**Paris 8°, France**

(EDITOR'S NOTE: The writer apparently is looking for a temporary position in the U.S. with a feed manufacturer. "Cattle food manufacturer" is an old term used in Europe for feed manufacturer. While the letter says "cattle food," it presumably refers to all types of feeds.)

• • •

## Attracting Students

East Lansing, Mich.

**To the Editor:**

I congratulate you on the very excellent editorial, "Help Wanted." (Feedstuffs, Feb. 14) I am certain that the support of people like you will help in our mutual goal of attracting good students to Agriculture.

**Richard M. Swenson**
**Assistant Dean**
**College of Agriculture**
**Michigan State University**

## *California's Grain Program Discussed*

SAN FRANCISCO — Grain men's views on the California Clean Grain Program were presented to the Central California Agricultural Inspectors Assn. at a meeting attended by inspectors from seven central California counties.

The panel was made up of Jerry Swensden, Continental Grain Co.; Jack Schuler, E. D. Wilkinson Grain Co.; Fred Haskell, the Pillsbury Co.; Mr. Jongeneel, Ryer Island farmer, and Orval Vaughn, Bureau of Plant Quarantine, California Department of Agriculture, moderator.

Mr. Swensden explained the warehouseman's problem by noting that


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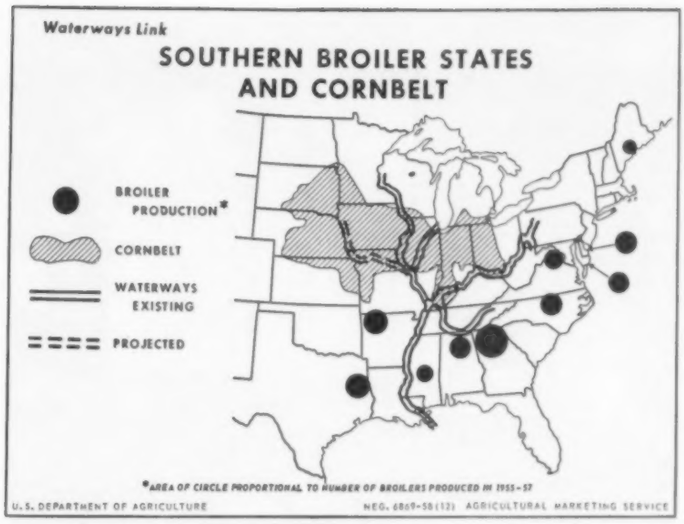


**CORN VIA WATERWAYS—Movement of corn by barge from the Corn Belt to southeastern states for broiler feeding flows over the inland waterways shown here. Ten years ago this traffic was relatively unimportant, but by 1957 waterborne unloads of corn at Memphis and Tennessee River ports were sufficient to have fed out roughly half of the broilers produced in Mississippi, Alabama and Georgia that year. (Also see story on page 53.)**

the inbound inspection is rapidly made and a thorough inspection is conducted when truckloads of grain are being shipped. He said this method leaves little security for the warehouseman and the condition of his inventory.

Mr. Schuler spoke from the merchandiser's point of view. He said that the burden of controlling weeds in the state "appears to fall on the grain shippers and merchandisers rather than on the ranch, which is the point of origin." He suggested that the control of weeds should not be attempted overnight and that a tolerance of weed seeds should be allowed until the farmers clean up their fields.

A producer's standpoint was given by Mr. Jongeneel when he blamed wild fowl and irrigation water for the spread of seed. He concluded that unless there were some way to improve those conditions the program did not make sense to him.

Mr. Vaughn concluded the discussion when he said that the program had been instituted to help the farmer. "This is difficult to do if he won't clean up his own fields," he said. Mr. Vaughn claimed that the grain industry has carried the burden by itself and the next legislation should shift the duty to the farmer, "in line with the program's original intention."

## Antibiotic Studied

NEW YORK — Study of the effectiveness of an antibiotic in preventing urinary calculi in lambs is to be continued at Texas A&M College with the help of a grant-in-aid from American Cyanamid Co., New York.

Dr. H. O. Kunkel, professor of animal husbandry and in charge of the research studies, plans to study the effect of Aureomycin, with and without terephthalic acid and other adjuvants, on lamb finishing performance.

### ARBOR ACRES EXPANDS

CARTHAGE, MISS.—Johnnie Jordan has been named farm manager for an Arbor Acres Farms, Inc., production center to be located near Carthage on a 143-acre site. Construction is underway on a hatchery with a capacity of 300,000 eggs. Production of White Rock breeding stock is scheduled for early fall.

**Brock Bulk Feed Bins Greater Convenience... Trouble-Free Service!**

Quality built for best protection to feed and to increase bin life.

*TWO MODELS: CENTER- OR SIDE-DRAW*

■ Easy-to-reach, slanting 22" fill hole that permits filling the *entire* bin. Either blower or auger filling.

■ Weatherseal construction throughout. Heavy gauge zincgrip steel . . . the finest available. Girder-like angle iron legs with steel bracing for rigidity. All seams caulked. Bolts have Neoprene washers.

■ Large 4" auger delivers feed faster . . . 400 to 600 bushels per hour.

■ Sturdy, weatherproof boot and slide valve.

■ Side-draw model available . . . finest bulk feed bin built. Free-flowing action.

■ Sizes: Center-draw model, 3 to 7.5 tons; side-draw model, 4 to 8.5 tons.

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Jim Schlickting Sycamore, Ill.
Bob Larson Elburn, Ill.
Walt Nash Morrison, Ill.
Bob Hines Galesburg, Ill.
Dale Hecksteller Wellman, Iowa
Curt Wells Washington, Iowa
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Rich Severson Marshalltown, Ia.
Kenneth Appleby Cedar Falls, Iowa
Bob Byrne Boone, Iowa
Chuck Morgan Sumner, Iowa
Ray Curtis Worthington, Minn.
Roger Kelso Sac City, Iowa
Bob Wentworth Laurel, Neb.
Case Dykstra Sioux City, Iowa
Ed Gerdes Spencer, Iowa
"Red" Grimsley Harlan, Iowa
Lloyd Harmsen Story City, Iowa
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Bob Hazen Muscatine, Iowa
Merlin Elliott Muscatine, Iowa

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# Cut in Power Need For Hay Wafering Goal at Illinois

URBANA, ILL.—Agricultural engineers at the University of Illinois are looking for ways to make hay wafers with less power. They believe that "a wafer-making process, rather than pellets, may eliminate the time- and power-consuming grinding process." It is their opinion that wafers may avoid "the pre-forming drying process that pellets require and the present extrusion process that is so wasteful of power."

Illinois agricultural engineers conducting the search are Profs. George Pickard, Walter Roll and John Ramser.

Studies at Illiois have been made with a closed-end cylinder press that makes wafers from either long or chopped hay. The agricultural engineers have been able to make a wafer 3¼ in. in diameter and 1 in. thick with a power output of about 3¾ h.p. for each ton-hour.

According to a university report, this power supply compares with 20-30 h.p. needed for each ton-hour by pelleting and wafering machines working on the extrusion process.

"Final savings of power in field wafering machines probably won't be that much," the researchers said. But they indicated that they are looking forward to "saving at least half of the power needed by the extrusion process."

The search currently is for the size and shape of pellet or wafer (1) that animals will eat conveniently and easily and (2) that can be produced fast enough in a simple and economical machine with acceptable power requirements.

Experimental wafering equipment at the Illinois station so far has been designed to find out how much pressure is needed to form hay wafers, to study how durable they are and how well they can be dried and to find out how these properties are affected by hay moisture and maturity, length of stem and size and shape of wafers.

In these studies, the researchers used alfalfa hay in various stages of maturity, at different moisture levels and in different forms (chopped and long, crushed and uncrushed). With the machine they studied effects of varying pressure, time of pressure hold and size and shape of the wafer.

Experimental results to date show that wafers made from low-moisture hay in a closed-end pressure machine will stick together best after thorough crushing and interlacing of stems and leaves. "Pressure alone has not been enough to make permanent wafers of high-moisture hay," the engineers said.

"More pressure is needed to form permanent wafers as the hay matures. But less pressure is needed to form high-density wafers as the amount of moisture in the hay is reduced. Since it is desirable to wafer hay at high moisture content to save leaves, some way must be found to form wafers under these conditions."

Research results so far have not uncovered any particular problems with drying wafered hay, according to the engineers.

**RESULTS OF EXPANSION PROGRAM—Open house was held recently at this modernized push button mill. The event also commemorated the 40th anniversary of D. E. Horn & Co., Inc., York, Pa. The observance included tours of the company's new office headquarters at York.**

### MILL ADDS MIXER, GRINDER

MERKEL, TEXAS — The Kimbell Mill & Elevator Co. here has added a mixer and grinder, according to Perry Davis, manager. This is in line with an expansion program the home company has been in during the last year or so.

PURE REEF OYSTER SHELL IS RECOGNIZED BY THE POULTRY INDUSTRY TO BE THE BEST SOURCE OF CALCIUM FOR POULTRY. THROUGH ITS USE THE POULTRYMAN OBTAINS...
• INCREASED EGG PRODUCTION
• IMPROVED EGG QUALITY
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• HIGHER HATCHABILITY
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50 LBS. NET
MAYO'S
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# *Corn Belt Corn Via Waterways Feeds Southeast's Broiler Industry Growth*

WASHINGTON—The 879,000 tons of corn shipped in 1957 by barge from the Corn Belt to southeastern states—if used entirely in broiler rations—would have been enough to have fed out almost half of the broilers produced in Mississippi, Alabama and Georgia.

This was pointed out by Herman Bluestone in the latest poultry and egg situation report from the Agricultural Marketing Service.

Statistics from the U.S. Army Corps of Engineers show that between 1947 and 1957 corn receipts at Memphis and Tennessee River ports mushroomed from only 55,000 tons to the 879,000-ton figure. Mr. Bluestone said 1957 receipts were equal to roughly one fifth of all the corn produced in Mississippi, Alabama and Georgia. (Also see map on page 51.)

This data indicates the important part barges are now playing in moving corn from the north central states to the expanding broiler industries of the Southeast.

Navigational improvements in the inland waterways, particularly the development of the TVA-improved Tennessee River, are given credit for setting the stage for this growth in waterborne corn transportation. Another factor is the series of successive increases applied to rail freight rates on grain and grain products.

The expanding poultry and livestock industries of the Southeast created the need for more feed than the region produced. Between 1947-49 and 1955-57 grain consuming animal units in the Southeast increased 29%, while corn production increased only 19%. Before the early 1950's railroads brought in nearly all of the "imported" corn.

The size of the corn crop in the north central states apparently had an important effect in the year-to-year changes in waterborne corn shipments to the southeast. Mr. Bluestone wrote that in the years when Corn Belt production was greater than the average of the preceding three years, sharp increases occurred in corn movement by barge in the following year.

Year-to-year increases in waterway corn movement were also associated with short corn crops in Mississippi, Alabama and Georgia. Price trends suggest, reported the Agricultural Marketing Service, that the cost of moving corn from the Corn Belt to the Southeast has not increased as much in the past 10 years as the cost of moving corn from the Corn Belt to the important northern broiler states, such as Delaware, Maryland and Virginia.

Most of the corn moves on the waterways in the last half of the crop year, April-September. During this period corn in the Midwest sells at its greatest discount relative to corn in the Southeast.

**MILESTONE—The mobile mill shown recently completed its 10th anniversary of continuous service. The owner of the mill, John Hottle, a Wirthmore dealer from Bath, Pa., says he has averaged about 75 batches of "grinding and mixing" each week since he bought the mill. The truck on which the mill was originally mounted was traded off in 1953. It had traveled a total of 266,000 miles. The mill is a Feedmobile made by Daffin Manufacturing Co., Lancaster, Pr. Mr. Hottle is standing on the rear platform, his son, Kermit is standing beside the unit, and Jacob G. Temos, Jr., a helper, is in the truck.**

**GIVE HIM ADVICE HE'LL APPRECIATE**

*Remind him to order Morton T-M Salt. See page 77.*

**BONUSES IN GRAIN STORAGE**

**PARKERSBURG BOLTED STEEL GRAIN TANKS**

**PARKERSBURG** bolted steel grain tanks guarantee maximum over-all economy. First cost is lower, because you size your tank to suit your needs. When expansion is necessary, flexible **PARKERSBURG** tanks can be easily enlarged, easily moved without loss of any parts except foundation bolts.

- famous PARKERSBURG rugged durability
- lower fire insurance rates
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***Whatever capacity you need . . .***

there's a PARKERSBURG tank for:

- on-the-farm storage
- commercial elevator operations
- feed mill storage
- feed retailer facilities
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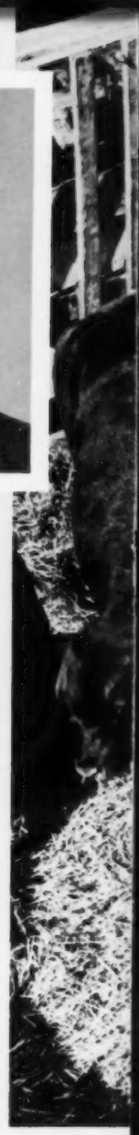
# Mr. Sears has done it again!

*For the second year in a row his calves, creep-fed on feeds with* Terramycin *have stood in the winner's circle at the Chicago Feeder Show*

His Reserve Champions actually brought 10¢ a lb. more than the Grand Champions. Veteran feeder Sears took Grand Champion honors at the 1957 show with another lot of calves creep-fed on feeds containing Terramycin.

Sears reports his Terramycin-fed calves, "had a much better coat of hair, showed more bloom, were more thrifty and healthy". He attributes this extra condition as one of several factors resulting in his top showing both years.



# Creep-feed trials with Terr up to 14% faster; use feed u

Sears is one of several cooperating ranchers who have tested creep feeds with Terramycin under on-the-range conditions. These ranchers paid strict attention to trial procedures and kept accurate records.

Suckling calves were fed a complete pelleted creep feed containing Terramycin supplied by feed companies in the area. Complete details of the test results are shown in the box below.

Besides special feeder trials, herd owners all over the country report the extra performance from creep-feeding calves with feeds containing Terramycin. Calves gain faster, feed efficiency is greater and they show more bloom and condition when they enter the feedlot. It's a powerful story for selling your customers and prospects. Get full details from your Pfizer representative.

**1** Redmond Sears, Merriman, Neb.

## TRIAL RESULTS

| | Control | TERRAMYCIN 40 gm/ton |
|---|---|---|
| Number of calves | 33 | 119 |
| Days on creep | 81 | 81 |
| Average initial weight | 245 | 243 |
| Average daily gain | 1.98 | 2.22 |
| % increase, avg. daily gain | | 12.12 |
| Feed per lb. of gain | 1.49 | 1.37 |
| % increase, feed eff. | | 8.05 |
| Feed cost per lb. of gain | $ .0436 | $ .0428 |
| Net profit on gain | $41.02 | $46.30 |

(Based on selling price of $30/100. Control feed $58.50/ton. Terramycin feed $62.50.)

**2** Floyd Casement, Sedan, Kansas

## EFFICIENT FEEDERS

| | Control | TERRAMYCIN (50 gm/ton; 30 gm/ton during latter part of trial) |
|---|---|---|
| Number of calves | 87 | 118 |
| Days on creep | 67 | 67 |
| Avg. initial weight | 421.5 | 420 |
| Average daily gain | 1.71 | 1.8 |
| % increase avg. daily gain | | 5.85 |
| Feed per lb. of gain | 3.55 | 2.62 |
| % increase feed eff. | | 26.20 |
| Feed cost per lb. of gain (Control feed $62.10/ton Terramycin feed $66/ton) | $ .1102 | $ .0865 |
| Cost of gain | 12.62 | 10.47 |
| Net profit on gain | 16.00 | 19.78 |
| % increase net profit on gain | | 23.62 |

**3** Dewey Truitt, Carnegie, Okla.

## FAST GAINERS

| | Control | TERRAMYCIN 40 gm/ton |
|---|---|---|
| Number of calves | 22 | 79 |
| Days on creep | 102 | 102 |
| Average initial weight | 338 | 342 |
| Average daily gain | 1.84 | 2.11 |
| % increase avg. daily gain | | 14.67 |
| Feed per lb. of gain | 4.61 | 3.45 |
| % increase feed eff. | | 25.16 |
| Feed cost per lb. of gain (Control feed $62.86/ton Terramycin $66.86/ton) | $ .1244 | $ .0998 |
| Net profit on gain | 23.65 | 32.29 |
| % increase net profit on gain | | 36.53 |

Reserve Grand Champions, 1958 Chicago Feeder Show. This Angus lot, shown by Redmond Sears, Merriman, Nebraska, brought $65.75 a hundred, over $10 more than the Grand Champions.

# ramycin show calves gain up to 26% more efficiently

*Advantages to Help Sell Your Terramycin-Fortified Creep-Feeding Program*

1. **Extra pounds—additional weights of 50-125 lbs. at weaning time over noncreep-fed calves.**
2. **Higher calf prices—calves showing better condition, thriftiness and hair coat bring premium prices.**
3. **Cows in better condition after weaning—cows with creep-fed calves are often 35-40 lbs. heavier after weaning, and in better shape for wintering and the next gestation period.**
4. **More uniform calves—calves from poor milkers or heifers get all the nutrients they need to keep pace with other calves.**
5. **Shipping losses cut—calves are in better condition to withstand stresses of truck or rail shipment; less chance of shipping fever.**
6. **Less shrinkage—calves have learned to eat by weaning time and settle down quicker.**
7. **Quick adjustment to feedlots—dry feed is not strange to calves; less subject to digestive disorders and shipping fever.**

## Creep Feeds with **potent** Pfizer **Terramycin**®

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# Ranchers May Face Major Price Break

DALLAS, TEXAS—Members of the Texas & Southwestern Cattle Raisers Assn. were told here recently by a Cornell University economist that within the next two years cattle ranchers will face the problem of how to manage their herds through a possible major price break.

"The stage is set for several more years of rising cattle numbers and a price break could come in mid-1961 or sooner," warned Dr. Herrell DeGraff, Cornell professor of food economics and research director, fact-finding committee, American National Cattlemen's Assn.

Dr. DeGraff said cattle numbers could go to 102 million head by the end of this year and to 110 million by the end of 1961. "If moisture and range conditions permit, the build-up in cattle numbers, begun with a leap of 3.5 million last year, could be unusually rapid," he said.

"A real educational job must be done in making ranchers realize that disaster lies in too large a build-up and in getting them to check the build-up as orderly as possible," Dr. DeGraff declared. "The upturn in cattle numbers is not yet of any serious proportions, but the potential has been created for a disastrously large build-up, and only the individual rancher can govern the orderly liquidation of excess inventory that the end of the drouth encouraged."

### IOWA ELEVATOR BURNS

WAYLAND, IOWA—Fire destroyed a feed and grain elevator at Wayland recently, causing damage estimated at $100,000. Harold Kauffman, who managed the elevator for the McKee Feed & Grain Co., Muscatine, Iowa, said the cause of the fire was unknown. The office and a warehouse containing 100 tons of grain and feed were saved.

# Surplus of Hay Might Develop in New Mexico

UNIVERSITY PARK, N.M.—Large hay surpluses in New Mexico can be expected unless feeding enterprises in the state are expanded, producers shift to other crops, or cotton acreage restrictions are removed.

This prediction is made in a bulletin issued by the Agricultural Experiment Station of New Mexico State University.

Author of the bulletin, "Hay and Feed Grain Marketing in New Mexico," is James R. Gray, associate agricultural economist. He says that "hay is a surplus commodity in New Mexico despite the increased demand of stockmen during drouth periods. Periods of short supply occur because about one half of the state's hay crop is sold at harvest to out-of-state buyers."

Mr. Gray also found that New Mexico has a current surplus of feed grains. However, the increased popularity of balanced rations, including use of sorghum grain, and a probable greater demand in the future for products from grain-consuming livestock by a rapidly-increasing population, are expected to help reduce the grain surplus.

The study shows that feed grain dealer buying activities are centered in Curry and Roosevelt counties, but that only a small portion of the state's hay crop is sold through dealers.

Dr. Stanley M. Aldinger

**RESEARCH DIRECTOR — The appointment of Dr. Stanley M. Aldinger as director of research and nutrition for Yoder Feeds, Inc., Kalona, Iowa, has been announced by Lester Yoder, president. Dr. Aldinger will be in charge of livestock and poultry feed nutrition and research conducted on the Yoder experimental farm. A graduate of Iowa State College, he holds degrees in animal husbandry and agricultural education.**

# Hot Spot Names Two Ass't Sales Managers

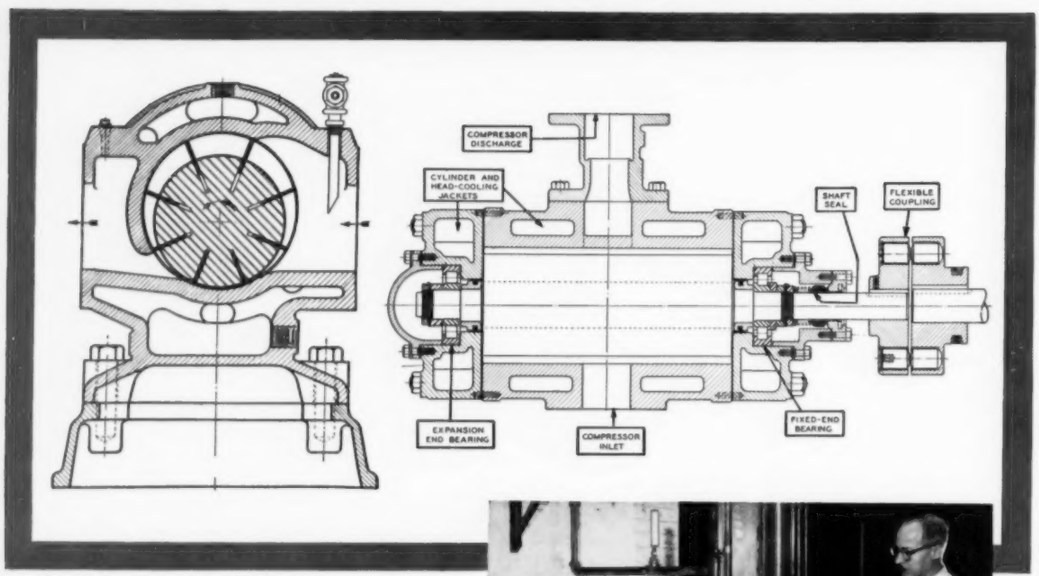
DES MOINES—R. L. Wilson, director of sales, Hot Spot Detectors, Inc., Des Moines, manufacturer of electronic temperature measuring and aeration systems, recently announced the appointment of Bruce E. Fulenwider and J. Douglas Craig as assistant sales managers.

Mr. Fulenwider, field representative for the company in the Minneapolis, Minn., area for the past five years, will assume managerial control of the eastern half of the U.S.

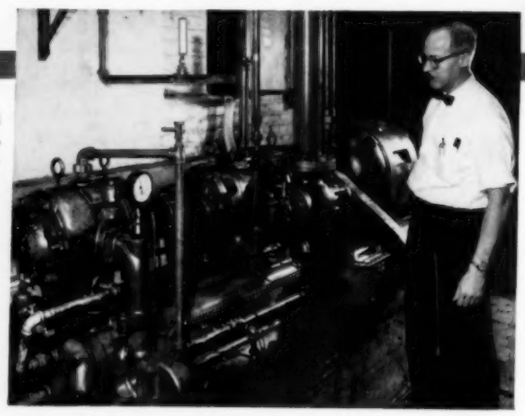
Mr. Craig will be responsible for sales activities in the western half of the U.S. Prior to his association with Hot Spot Detectors, Inc., he was with National Vido Corp. of Chicago, manufacturer of electronic components.

### PROCESSES ALMOND HULLS

LIVE OAK, CAL.—Almond hulls to supply feed manufacturers are now being processed by the Fadie Manufacturing Co., Live Oak, which has been sold by its former owner, Harold Fryer, to W. S. Darnell.


Hard service never affected this Fuller rotary's original output—230 cfm. of air at 90 lb. G., reports Mr. Schott, chief engineer, Thomas C.Wilson, Inc., Long Island City, N.Y.



**FULLER ROTARY COMPRESSOR RUNS 13 YEARS WITHOUT DOWNTIME**

A Fuller rotary at Thomas C. Wilson, Inc. got its first maintenance shutdown recently, for renewal of roller bearings and rotor vanes—after running without downtime since 1945.

**4 years of 24-hour service.** The Wilson plant makes tube cleaning equipment, tube expanders and portable pneumatic tools, and so makes heavy daily demands on shop air. For the first four years, three-shift operation kept the Fuller rotary running round the clock. Since 1949, it's been working eight-hour shifts.

**Simple design means trouble-free service.** Besides bearings, the only moving parts in a Fuller vane-type rotary compressor are the cylinderical rotor and the blades. These compensate for wear automatically. Cylinder head slips off, permitting blade and bearing inspection in a matter of minutes.

**Compact and vibration-free.** Direct-drive system saves space. Simple, rugged design gives constant service without extensive supervision. Thus, Fuller rotaries can be installed out-of-the-way—on upper floor, on balconies, in basement corners, using low-cost, light-weight foundations.

1189
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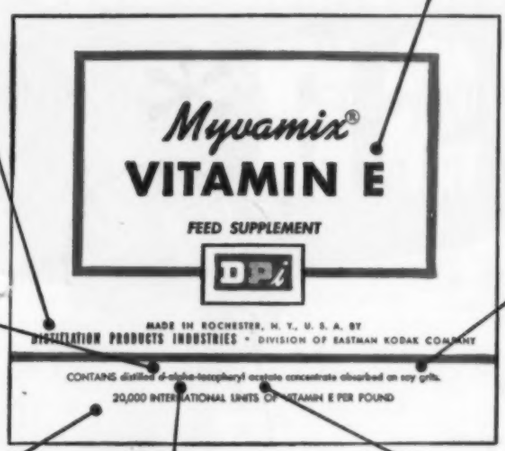
Vitamin E is considered by many authorities to be an essential part of a nutritionally complete diet for chickens, turkeys, dogs, and other animals. We will be happy to send literature references on request.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CONTAINS distilled d-alpha-tocopheryl acetate concentrate absorbed on soy grits.
20,000 INTERNATIONAL UNITS OF VITAMIN E PER POUND

The "d" means the vitamin E in *Myvamix Vitamin E Feed Supplement* is the same stereoisomer that appears in nature. 1 milligram of *d*-alpha-tocopheryl acetate is equivalent to 1.36 International Units of Vitamin E.

The vitamin E in *Myvamix* is on a dry, non-dusting soy grits base. We use grits instead of meal because they have less fiber, less moisture, more protein, more uniform particle size, and are dusted to remove hulls and powder. All this means a higher quality product, one that's as easy to handle as anything in your mill.

With *Myvamix*, you know exactly how much vitamin E is in your feed. There's a sure 20,000 International Units of Vitamin E per pound. The cost is only a few dimes per ton of feed.

There are at least seven tocopherols which have some vitamin E activity. The most effective biologically is "alpha." That's what is in *Myvamix Vitamin E Feed Supplement*. (Only 10 to 15% of the tocopherols in corn is "alpha"—the rest is "gamma," one of the least effective of all.)

The "acetate" means that the vitamin E in *Myvamix* is really stable. Tests show no loss of potency even after storage in finished feeds for six months at 100 F. The full potency you put in the feed is there when the feed is fed.

# Advantages and Problems in Integration Outlined

MINNEAPOLIS — Recognition, study, and understanding of integration in agriculture can help to minimize its unfavorable aspects and take maximum advantage of its favorable impacts, a feed industry executive said here recently.

Dean McNeal, executive vice president, The Pillsbury Co., Minneapolis, pointed out both favorable and unfavorable possibilities arising from integration in an address presented to the annual Farm Forum held here by the Minneapolis area Chamber of Commerce.

An event held to "bring a thorough, objective and open discussion of broad problems related to agriculture," the meeting had as its theme, "Progress Through Change." Speakers discussed changes in distribution, economic changes, technical advancements and the problems faced by modern agriculture as it attempts to meet these changes intelligently.

Mr. Mc Neal, whose topic was "Changes Through Integration," pointed out that integration itself is a result of change rather than a cause of it. He said it has arisen as an answer to a growing need for capital and a growing complexity in marketing.

**Advantages**

Mentioning both the favorable and unfavorable aspects, he pointed out these advantages:

It helps fulfill the farmer's desire to grow by providing needed capital which allows the farmer to expand operations, to make the best use of labor and other resources, to spread his risk, to secure management help and to reduce marketing problems.

It fulfills the producer's and distributor's desire to grow by providing a steady supply of quality products, by distributing management costs, by expanding volume and by eliminating or reducing the sales costs between the various units in the integrated operation.

Looking at some of the broader implications of integration from the standpoint of the farmer, Mr. McNeal pointed out that farm units will get bigger, farmers will tend to become specialists, mechanization and automation on farms will continue to advance and methods of getting started in a new farming venture will change in that it will open the field to all qualified individuals if they have adequate financial backing from some source.

Some of the broader implications seen from the point of view of the consumer, he said, are that food will be of higher quality and produced to fit a particular demand and food products will be cheaper.

**Disadvantages**

There are also problems, however, he said. One of them is that farmers undoubtedly lose some of their traditional freedom of enterprise under integration. But the standard of living of those remaining in agriculture may be better.

Integration may also lead to more control by the government over the total of the integrated operations, Mr. McNeal said, and it may result in a short-run over-production which is more difficult to prevent than is now the case. There is a tendency under integration, he said, for production of the raw material to be less sensitive to short-range changes in demand.

In the Midwest, Mr. McNeal said, these two factors are being considered carefully by those with a particular interest in this area:

Production and processing of some livestock and poultry products seem to be moving closer to the heavy consuming areas. This would seem to indicate that integration may advance faster in the heavily populated areas than in the Midwest.

Climate seems to be an important factor also in determining where concentration and integration may advance fastest. Reduced housing costs in the warmer climates have encouraged greater expansion in the big operations in those areas. He said, however, that this trend can be changed if Midwest producers and processors counter with aggressive action. Two ways to meet it, he said, are emphasis of top quality in midwest products and the acceptance of new mechanical and scientific advances to increase efficiency in production, movement and processing.

Changes in distribution and consumer preference as causes of integration and other trends in farming were discussed by Kenneth D. Naden, agricultural counsel for the National Association of Food Chains.

He pointed out that the principal development in the food industry is the growing interdependence of the producers, processors and distributors upon each other.

"One of the results of this status of interdependence is that farm production is becoming more or less market-oriented. The boundary line between production and marketing is rapidly becoming blurred.

"Another principal feature of the food industry is the development of a mass distribution system. It is the simultaneous development of mass production and mass distribution which is the key to much of what is happening in the food industry today."

Also taking a look at integration was Dr. Sherwood Berg, agricultural economist at the University of Minnesota. He said that while red meat production is generally not integrated, the swine industry might be the first in the parade of red meat integration.

The role of government in agriculture was discussed by E. L. Peterson, assistant secretary of agriculture. Among other needs of agriculture, he said, is a demand for increased numbers of trained people, both on the farm and in those off-farm activities dependent upon farmers and upon which farmers depend.

"Enrollment in our agricultural schools and colleges is at relatively low levels," he said. "All of us with origins and interests in agriculture have a responsibility to help this great and necessary industry and the people in it to change with the rapidly changing times."


Should your formula include TSB*

We should like to suggest another ingredient, TSB. A pinch of TSB may easily turn out to be the factor that makes your feed more profitable.

**What is TSB?**

It stands for Technical Service Bureau . . . *Nopco's* Technical Service Bureau which supervises the compatibility and method of manufacturing

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Nopco-Pak is a vitamin supplement blended for you with Nopco know-how.

It is formulated to meet *your* specifications.

Nopco Paks contain Nopco's unique Micratized® Vitamins A and D, which make possible delivery of full vitamin potency without costly overages.

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Nopco's Technical Service Bureau staffed with trained nutritionists and chemists qualified to serve you. It has already developed a vast number of compatible formulas and is currently originating new ones and revising old ones at a rate of more than 1000 a year. This expert nutritional assistance is yours at no cost when you buy Nopco-Paks.

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## Complete Swine Feeds Lead in North Dakota

BISMARCK, N.D.—One third of all feeds reported sold in North Dakota during 1958 were complete swine feeds, according to a report released recently by the North Dakota State Laboratories Department.

Of a total of 80,395.12 tons, 26,705.92 tons were complete swine feeds. Another 2,755.42 tons of swine supplements were sold to make this type of feed the state's best seller during the year. Combined, they make up 37% of the total and show a 58% boost over the previous year.

The year's total sales of all feeds showed a 30% increase over 1957's total of 62,046.49 tons, and set a record for tonnage sold in the state.

Beef and cattle feeds account for 22% of total sales and show a 41% gain in volume over the previous year, while poultry feeds constitute 26% of the total and show a drop of about 4% during the period.

Following are production statistics, in pounds:

**North Dakota**
**Commercial Feed Sales Reported for 1958**

| | Pounds |
|---|---|
| **Poultry Feeds** | |
| Chicken Feeds (Complete Feeds) | 20,915,480 |
| Chicken Feeds (Supplements) .. | 7,566,150 |
| Turkey Feeds (Complete Feeds) | 8,378,900 |
| Turkey Feeds (Supplements) ... | 5,139,620 |
| Swine Feeds (Complete Feeds) .. | 53,411,840 |
| Swine Feeds (Supplements) ..... | 5,510,110 |
| Beef Cattle Feeds (Complete Feeds) ..... | 10,648,780 |
| Beef Cattle Feeds (Supplements).. | 11,726,300 |
| Dairy Feeds (Complete Feeds) ... | 4,339,350 |
| Dairy Feeds (Supplements) ..... | 4,648,550 |
| Calf Feeds ..... | 3,632,280 |
| All Purpose Feeds ..... | 1,584,420 |
| Dog & Cat Foods (Dry) ..... | 1,522,480 |
| Dog & Cat Foods (Canned) ..... | 1,347,460 |
| Other Animal Feeds ..... | 1,465,980 |
| Beet Pulp ..... | 2,153,650 |
| Soy Bean Oil Meal ..... | 538,000 |
| Meat & Bone Meal ..... | 558,000 |
| Wheat By-products ..... | 228,800 |
| Mineral Feeds ..... | 1,951,890 |
| Iodized Salt ..... | 538,740 |
| Sulphurized Salt ..... | 347,450 |
| Mineralized Salt ..... | 6,883,700 |
| Oyster Shell ..... | 5,752,400 |
| TOTAL POUNDS | 160,790,330* |

*Tonnage Tax paid on this total.

## Milk Replacer Tests Conducted With Calves

URBANA, ILL.—Experiments with milk and milk substitutes have led a dairy scientist at the University of Illinois Agricultural Experiment Station to conclude that milk is "ideal" for satisfying the young calf's need for nutrients.

Prof. K. E. Harshbarger reported that average daily gain of calves fed milk substitutes, calf starter and hay was about 1 lb. per day for the first 16 weeks of their lives, while the average daily gain was 1.26 lb. a day in a control group of calves fed about 360 lb. whole milk, calf starter and hay. The substitutes were fed from five days to eight weeks of age in place of whole milk, he said, and colostrum milk was fed during the first four days.

Prof. Harshbarger reported that in addition to these differences in gain, the general appearance of calves fed whole milk was "more desirable." Whole milk contains nutrients "in a form that the young calf can readily use," according to the researcher.

Differences in gains were greatest at four weeks of age, when calves were weighed every four weeks. After four weeks of age, the feeding of milk substitutes, calf starter and hay resulted in good gains.

Experiments on milk substitutes are being continued this year. At present, whole milk is being fed for the first 10-14 days before starting the calves on the milk substitutes. "Since milk is the ideal feed for the very young calf, it will give the calf a good start before it is switched to a milk substitute," Prof. Harshbarger said.

## Sales Representative

SPRINGDALE, ARK.—Ben R. Spainhour, Jr., Hattiesburg, Miss., has been appointed southeast sales and service representative for Brown's Ledbrest Cornish Cross Cockerels, it was announced by Gail E. Brown, vice president, Jeff D. Brown & Co., Inc., Springdale. Mr. Spainhour formerly owned and operated the Spainhour Poultry Co., Hattiesburg.

THE MIXER THAT MEETS
EVERY MIXING REQUIREMENT...
THE Marion MIXER
WITH Exclusive MIXING AND BLENDING ACTION
MIXES DRY MATERIALS:
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Absolute accuracy is assured through the exclusive Marion cross blending and mixing action. Even trace materials can be thoroughly and completely blended into your product. A constant uniformity, guaranteed
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*Feedlot facts from Monsanto*

# MHA* SAVES UP TO $3.98 PER TON OF BROILER FEED AND BOOSTS BROILER PROFITS BY $10.83 PER THOUSAND

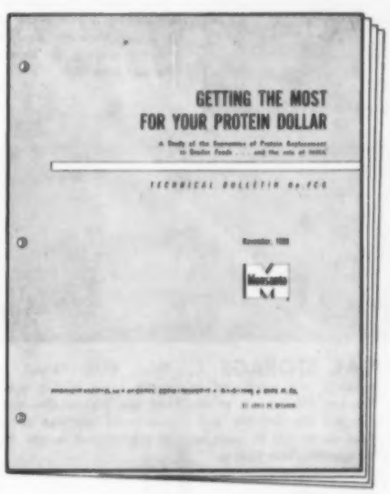
At a saving of $3.98 per ton, MHA and other low-cost nutrients replaced four kinds of high-priced animal protein feedstuffs totaling 11.5% of "Finishing Ration F-1." At a saving of $3.22 per ton, they replaced high-priced animal protein feedstuffs totaling 14.5% of "Starting Ration S-1."

| Starting Rations (0-35 Days) S-1 (no MHA) | Starting Rations (0-35 Days) S-2 (with MHA) | Ingredient | Finishing Rations (35-60 Days) F-1 (no MHA) | Finishing Rations (35-60 Days) F-2 (with MHA) |
|---|---|---|---|---|
| 24.2 | 23.6 | % Crude Protein | 24.0 | 23.5 |
| 1015 | 966 | Calories | 1110 | 1061 |
| 42 | 41 | C/P | 46 | 45 |
| % | % | | % | % |
| 59.84 | 54.12 | Corn | 46.22 | 42.72 |
| 16.00 | 33.80 | Soy (51%) | 20.00 | 34.80 |
| 2.00 | 3.20 | Fat (Tallow) | 12.00 | 12.00 |
| 14.50 | — | High-Cost Animal Protein | 11.50 | — |
| 2.50 | 2.50 | Corn Gluten Meal | 4.00 | 3.75 |
| 2.00 | — | Corn Distillers' Solubles | 2.00 | — |
| 1.25 | 2.00 | Dehydrated Alfalfa | 1.75 | 2.00 |
| .13 | 1.90 | Dicalcium Phosphate | .75 | 1.85 |
| .75 | 1.10 | Calcium Carbonate | .75 | 1.50 |
| — | .20 | Sodium Sulfate | — | .20 |
| .30 | .40 | Iodized Salt | .30 | .40 |
| .73 | .73 | Constant Ingredients | .73 | .73 |
| — | .05 | MHA | — | .05 |
| $79.04 | $75.82 | Approximate Cost/Ton: | $89.22 | $85.24 |
| $3.22 | | Savings Per Ton | $3.98 | |

Broilers grown on the lower-cost MHA rations earned $10.83 *more* per thousand over feed cost than those grown on the rations with high-priced animal protein feedstuffs.

**Only MHA gives you such significant feedlot-proved savings . . . it's the lowest-cost, most efficient source of supplementary methionine.**

To get the full story on the savings you can make by replacing high-cost animal protein with cost-saving MHA, send for the new bulletin, "Getting the Most for Your Protein Dollar" . . . the coupon is for your convenience.




*Reg. U. S. Pat. Off. T.M. for Monsanto's Methionine Hydroxy Analogue. Use of methionine hydroxy analogue in poultry feeds—without regard to source of supply—is covered by Monsanto's U. S. Pat. No. 2,745,745.

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# South Dakota Tests Pelleted Alfalfa In Lamb Feeding

BROOKINGS, S. D.—Sheepmen attending the recent annual Sheep Field Day at South Dakota State College were told that lambs fattened on pelleted alfalfa hay in tests had a "satisfactory" rate of gain, but "the cost of pelleting and the greater feed requirements resulted in a higher feed cost."

Dr. Leon F. Bush, associate professor of animal husbandry, South Dakota State, compared lambs fed pelleted alfalfa hay with those fed a meal ration of half alfalfa hay and half corn. Two of the lots on pelleted alfalfa were changed to a new diet from 90 lb. until slaughter. The new diet was made up of 60% alfalfa and 40% concentrate in pellet form.

Lambs that received the alfalfa and corn in meal form gained fastest, Dr. Bush said. They gained 0.51 lb. daily and required 676 lb. feed to gain 100 lb. The lambs finished out with the alfalfa and concentrate pellets gained 0.50 lb. and required 939 lb. feed. Those fed alfalfa pellets gained 0.46 lb. per lamb daily and required 997 lb. feed per cwt. gain.

Dr. Bush reported that all the lambs started on feed without trouble and showed no evidence of scouring or going off feed. All were self-fed.

Lambs on alfalfa and corn in meal form made the most efficient gains. The feed cost was $10.90 per 100 lb. gain. Lambs on alfalfa pellets had a $13.42 feed cost, and those finished out on alfalfa and concentrate pellets had a $14.53 feed cost per 100 lb. gain.

Dr. Bush reported that carcass grade and yield were lowest for lambs fed alfalfa pellets, though the difference was less than one-third of a grade. Lambs finished out with the alfalfa and concentrate pellets graded and yielded nearly the same as those fed the meal ration.

He said most of the lambs on the alfalfa pellets carried enough finish to grade choice, but they were paunchy and produced a lower yield. He noted, however, that the carcasses were desirable in color, quality and finish.

### Stilbestrol, Dynafac Tests

Wether lambs on a fattening ration that received stilbestrol implants, Dynafac, animal fat or a combination of treatments showed increased, though inconsistent, gains in experiments at South Dakota State College, Dr. Lawrence Embry and Donald Reid of the animal husbandry department reported at the sheep field day. They said that the responses from Dynafac and fat were "not statistically significant" and that "more research was needed before recommendations could be made."

The researchers said that a 6 mg. stilbestrol implant in the ear of each lamb increased gains 15.3 and 17.8% over controls in two feeding trials. In one trial, carcass grade was lowered about one sixth of a federal grade. There was some trouble with urinary calculi in both treated and untreated groups. An experiment is in progress to test a 3 mg. stilbestrol implant to see if a good rate of gain will result without reducing carcass grade, they reported.

Animal fat fed at 3% of the ration seemed to give a small increase in rate of gain, but it was not consistent, according to Dr. Embry and Mr. Reid. When fed alone and in combination with stilbestrol and Dynafac, the average increase in rate of gain to the fat was 6.6 and 5.8% in the two trials. They said additional trials will have to be conducted to find out if fat can be economically fed to fattening lambs.

They said Dynafac "also did not give a consistent growth response." When fed alone and in combination with fat and stilbestrol, the average increase in rate of gain was 11.7 and 9.8% in the two trials. "The increase wasn't statistically significant, but great enough to warrant further trials," researchers said.

Dr. Embry and Mr. Reid pointed out that the experiments were conducted with heavy weight feeder lambs. A high concentrate ration with only 20% alfalfa hay was fed in an attempt to produce choice slaughter lambs at about 105 lb. They said such rations often cause digestive troubles with lambs.

Other experiments will be conducted to determine the value of this high energy ration for finishing heavy feeder lambs and the value of Dynafac in increasing the rate of gain and reducing digestive troubles.

### Response to Stilbestrol

There has been "a great deal of variation" in the results of trials where stilbestrol is fed to fattening feeder lambs, according to Dr. Bush.

Dr. Bush related that many trials show an increased rate of gain and feed efficiency when stilbestrol is fed in amounts up to 2 mg. per lamb per day. Other trials indicate either no response from feeding the hormone to mixed groups of ewes and wethers or that it may depress the growth rate of ewes.

The animal husbandman reported that two trials conducted at South Dakota showed both ewe and wether lambs responded to stilbestrol feeding with an increased, though not significant, growth rate. There was no evidence of a side reaction from feeding the hormone in either trial, he reported.

In one trial, Dr. Bush hand fed ewe and wether lambs alfalfa hay and corn plus 0.1 lb. protein. He mixed stilbestrol in the protein, using 1.6, 1.8 and 2.0 mg. A control group re-


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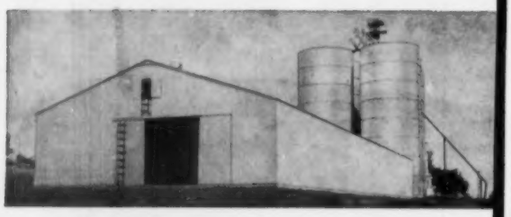

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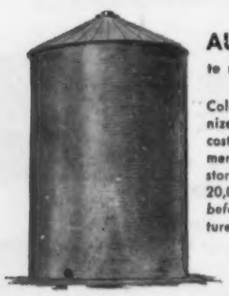

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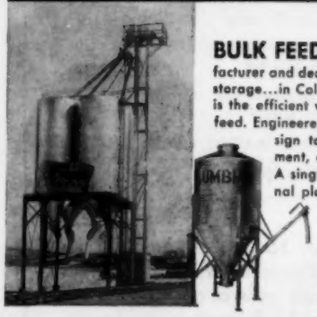

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**FEEDSTUFFS WANT ADS**

J. L. Cutie R. L. Simpson

**CUBAN APPOINTMENTS—Two appointments of personnel in Cuba have been announced by Nichols, Inc., Exeter, N.H., poultry breeding firm, as part of an expansion in the Cuban area. Jesus L. Cutie has been named sales and service representative, a new position involving responsibility for the distribution of breeding stock, broiler chicks and broiler eggs. For the past two years, he has been on special assignment to San Juan, Puerto Rico. The new manager of Granja Nichols de Cuba, S. A., in Nueva Gerona, Isle of Pines, is Robert L. Simpson. He was a Nichols production, sales and service specialist for nine years, working out of the company's headquarters in Exeter.**

ceived none. He said lambs that received the stilbestrol gained faster and had better feed efficiency, but the difference wasn't great enough to be significant. At the same time their carcass yield decreased slightly, as did their grade (less than one-third of a standard grade).

Lambs in the other trial were self-fed a 50-50 roughage-concentrate meal ration. Stilbestrol was included at 0.45, 0.55 and 0.65 mg. per pound of feed. A control group received none. The lambs ate enough feed so that their daily hormone intake was 1.5, 1.8 and 2.2 mg.

Results were quite similar to the first trial. The ewe lambs and wethers in each treatment gained faster than the controls. The wethers in each lot gained significantly faster than the ewes, but there was no depression in gain in the ewe lambs. A slight decrease in carcass yield and grade was recorded for those fed stilbestrol.

## Southeastern Courses For Poultrymen Set

RICHMOND, VA.—The first session of the Executive Development in Management School sponsored by the Southeastern Poultry & Egg Assn. will open April 26 at the Center for Continuing Education at the University of Georgia in Athens.

Harold E. Ford, executive secretary of the association, said the school, which is held in three one-week sessions, will stress finance and credit, creative thinking, executive salesmanship, wage and hour regulations, poultry statistics and their application, intra-company communications, business policy and forecasting, administrative practices, poultry outlook, public relations and fringe benefits.

Tuition is $150 a session or $350 for registrants who pay in advance for all three sessions. Each registrant must pay his own meal and lodging expenses.

Applicants are asked to contact the Southeastern office at 235 E. Ponce de Leon Ave., Decatur, Ga., as soon as possible.

In another announcement, Mr. Ford said the association will sponsor another Egg Quality & Grading School June 29-July 3 at Mississippi State College.

Other courses announced by Mr. Ford are the association's annual Processing Plant Seminar for plant foremen May 12-13 at the Continuing Education Center in Athens and the association's Sales Workshop July 21-22 also at the Continuing Education Center in Athens.

Interested persons are asked to contact the Decatur office.

## Educator to Speak

MEMPHIS—The National Cottonseed Products Assn. has announced that Dr. George C. S. Benson, president, Claremont (Cal.) Men's College, will address the annual convention of the group May 12. The convention will be held May 10-12 at the Mark Hopkins and Fairmont Hotels in San Francisco. He will speak on "The Future of the States."

### FEED FIRM SOLD

ALDEN, MINN.—The Morin Mills Co. here has been purchased by a group of farmers and businessmen for the purpose of forming an Alden Cooperative Elevator Co. Present services of the mill, which include custom grinding, mixing and pelleting, will be continued, and a new service—buying and selling grain—will be added.

## New Hog Pricing

MILWAUKEE, WIS.—A new pricing system for live hogs, with payment of a premium for lean, red meated swine, has been announced by I. E. Ericson, manager, Plankinton Packing Co., a division of Swift & Co.

Under the new Plankinton system, a 33% primal cut yield is considered average for a live hog. The company will pay 25¢ cwt. more for all hogs rating a point better, Mr. Ericson announced. If the rating is considered 37%, the premium over the average will be $1 cwt. For each 1% below the 33% rating, the firm will discount 25¢ cwt. on the live hogs.


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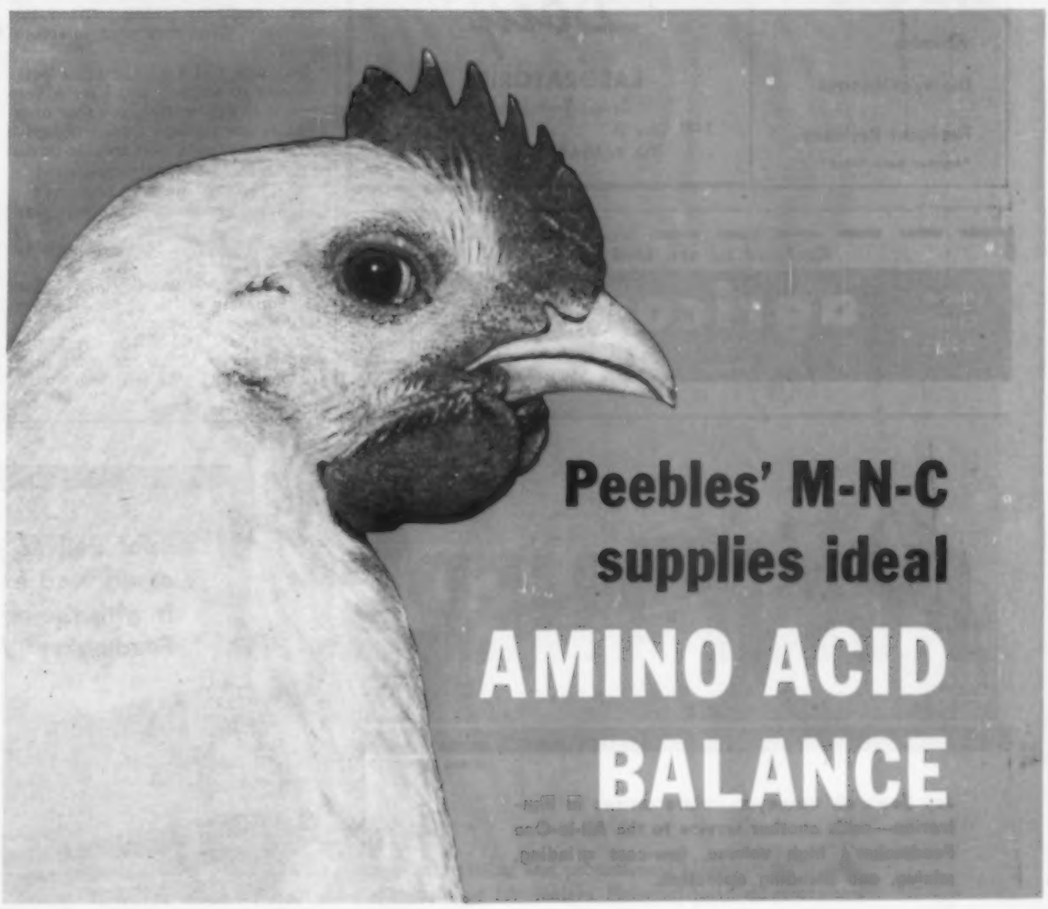


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Peebles' exclusive spray-dried process assures uniform high quality. M-N-C's smooth, even texture provides uniform color and even distribution in mixed feeds.

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# How to Make Your Sales Letters Sell

**Here's a five-point check list feed men can use as a guide to stronger, more direct response.**

By H. E. Carroll

Some promotion-minded feed men have found that sales letters can be used to build volume. In addition to selling specific supplies, the sales letter can be a constant reminder to customers. Advertising expenses can be controlled with sales letters, too.

Here are five principles of writing strong sales letters:

**Establish an objective:** Your objective for your sales letter will serve as a target and make it easier to reach the goal. You can set your objective easily by asking yourself this question: "What do I want to accomplish?"

You will find that the sales letter is easier to write if you have a very specific objective. Here are four questions to answer about your objective to reduce it to its most specific terms:

1. What do I want to promote?
2. When do I want to promote?
3. Why would my customers want this?
4. Who are the best prospects for this?

For example, in answering the third question, one of the obvious answers would be to save money. However, you may not feel you can afford to reduce prices. What are some other reasons "why" your customers would be interested? Quicker? Easier? Exclusiveness?

You will find that as you answer these questions, you will have all the appeals necessary to write plenty of sales appeal into the letter.

**Hang it on a peg:** The average sales letter will contain about 250 words. These words would take you about two minutes if you were talking directly to your customer. In that brief period of time it is only possible to get over the sales story on one specific point effectively. Letters that don't follow this rule will end up in the waste basket.

Successful sales letters are specific. If you are pointing out an economy appeal, spell out the dollars and cents that will be saved by buying now.

By selecting one basic want of your customer and then writing to prove that point (and that point only) your sales letter will sell more for you. Slant everything in your letter to show how the customer will gain the promised benefit.

**Use the coffee cup test:** After complete preparation—setting the objective, selecting the customers, and determining why they will buy—the next step is putting your words down on paper. If your preparation has


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Now you can pipe processed feeds directly from the mixer to storage bins, feeders, hoppers—overhead or ground level—at distances up to 30 or 40 feet. Flexible 4-inch tubing can be easily joined in any number of lengths. Powerful air delivery puts the feed right where it is needed—instantly, without waste. The whole operation is quick, clean, efficient—giving your customer better, faster service—making less work for your operator.

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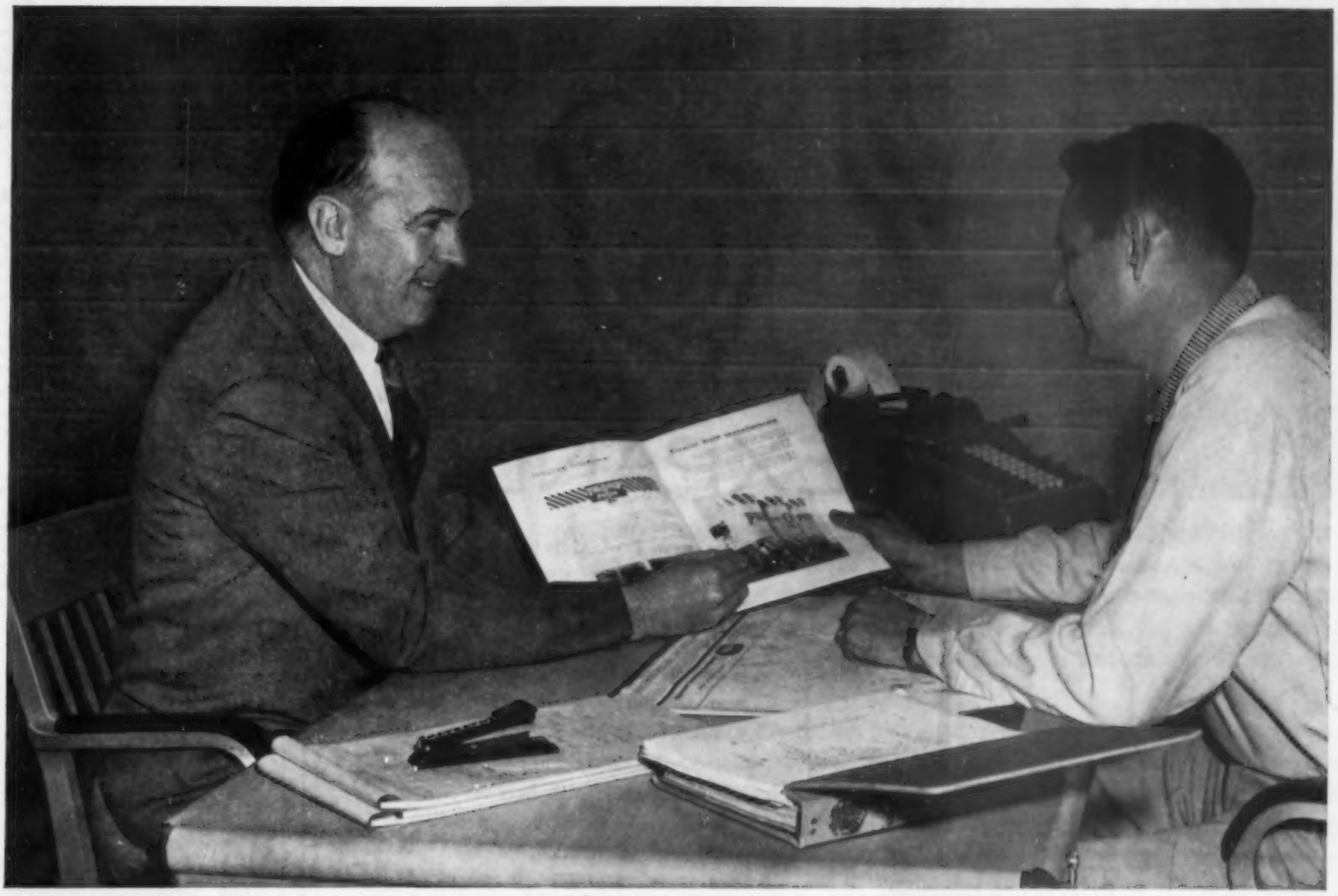
# "We believe that a sound marketing plan is the key to our dealers' success,"

says **R. N. AMMON,** *Manager of St. Joseph Feed Division of The Quaker Oats Company, in this report to Ful-O-Pep Feed Dealers*



*R. N. AMMON (left) discusses marketing plans with A. C. Coffman, owner of the Coffman Grain and Feed Company, at Oregon, Missouri. Mr. Ammon, past President of the Midwest Feed Manufacturers Assn., has served the feed industry for over 23 years. In 1957, he joined The Quaker Oats Company as Manager of Ful-O-Pep's St. Joseph Feed Division.*

"Through the years, I have had the opportunity to work with many dealers and to study their operations.

"It has been my observation that the dealer who analyzes his market area carefully, determines his customers' needs, then devotes his entire efforts to helping them produce meat, milk and eggs more efficiently, is the dealer who gets ahead.

"Quaker has long realized this, that's why Ful-O-Pep salesmen are spending so much time helping dealers set up good marketing and sales promotion plans.

"Our men are not only trained to help dealers determine their market potential and trading area, but they also help analyze the competitive situation and offer friendly counsel on financing, pricing and other management problems.

"New advertising and promotional ideas are constantly being developed for dealers. Selected farm directors are helping promote Ful-O-Pep Feeds on farm television and radio programs. Dealers are enthusiastic about our new billboard and direct mail advertising. Our most recent promotions—the meat-type hog bonus plan, 3-way promotion featuring Ful-O-Pep Pig Feeds, and the quality egg program—are also stimulating sales and helping dealers and feeders increase their profits.

"We extend to you an invitation to join up with The Quaker Oats Company and take advantage of our free marketing and counselling service."

Ray M. Ammon

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*made by The Quaker Oats Company*

We invite Feed Dealers to visit our modern Feed Mills located at: Cedar Rapids, Ia. Memphis, Tenn. • St. Joseph, Mo. • Sherman, Tex. • Shiremanstown, Pa. • Lawrenceburg, Ind. • Chattanooga, Tenn. • Tampa, Fla. • Asheville, N. C. • Jasper, Ala.

been thorough, the letter will almost write itself.

Some feed men feel that they can't write acceptable sales letters. Actually, this is a false thought because every man I have talked to who said he couldn't write a sales letter denied that he couldn't sell any customer when he was face-to-face with him.

Successful sales letters are nothing more than direct salesmanship in print. All that is necessary to write interesting, convincing letters is to sit down and visit with your customer on paper. If you will write in the way you talk to your customers, you will sell more merchandise.

Give every sales letter the coffee cup test. Read the opening remarks and see if you think they would sound natural if you made them over a cup of coffee with your customer.

Good sales letters are carbon copies of the sales talk you give everyday. They have an easy, natural, conversational tone. They sound real and they produce real results.

**Make it easy to act:** "Hoping you will favor us with your business" carries nothing more than a hope and a prayer. Some people will respond, but you will find that far more people will act if your request for action is positive. Your customer should be encouraged to do something and something specific.

For instance, you might suggest that he call you . . . and give your telephone number. This gives him something specific to do and makes it easy to act.

Asking for action in the last paragraph of your sales letter is not high pressure selling. It is expected. For instance, suppose that your letter moved along rapidly and interestingly stressing how your customer can get what he wants. Then it ends with a letdown like this: "Drop in sometime."

Your customer may drop in sometime when he has an hour to kill. But, he may wait until the special you are featuring in your sales letter is sold out. Successful sales letters ask for action—now.

**Give it a kicker:** Many successful sales letters get the most response in the P.S.—the "kicker" of a sales letter. The reader is just about convinced (but not quite). He reads your last statement, your "kicker." He acts on impulse.

For instance, you may have been stressing quality all through your sales letter. Your letter has been hung on the quality peg. Then, as an after thought, you mention a reduced price for the next 10 days, the "kicker" that will bring in business now.

Try this five step plan when you write your next sales letter. It will make your writing easier, your customers will find it more readable and you will get extra sales volume month after month.

## *Some Silages Reduce Cows' Thyroid Activity*

WOOSTER, OHIO — Dairy scientists at the Ohio Agricultural Experiment Station are tracking down the reason for a decline in milk production when cows are switched abruptly from hay or corn silage to a silage made from a mixture of legumes and grass.

The finger at this time points to the presence of certain substances in silage that affect the cow's thyroid gland. Activity of the thyroid was slowed up when silage high in alfalfa or clover was fed. This effect could cause a falling off in milk production.

J. H. Vandersall, Dr. J. W. Hibbs and Dr. H. R. Conrad, who are investigating the problem, theorize that some thyroid blocking substance may be formed in legume-grass silage during fermentation. This idea is being checked in experiments with heifers.

Initial work showed that milk output was decreased from 10 to 22% when the change-over to legume-grass silage was sudden. The discovery that this reduced milk flow cannot be blamed entirely on a lower intake of nutrients caused the scientists to try a new approach to the trouble.

## Open House in Georgia

GAINESVILLE, GA. — An open house celebration was held recently for the new warehouse of Allison & Holland Poultry Service near Gainesville. The firm was formed last fall by Leonard Holland and Jack Allison, both of whom were formerly associated with a major Gainesville feed manufacturing company. Milton Benefield is manager of the new warehouse.

### $50,000 FIRE DAMAGE

YUMA, ARIZ.—Fire this week destroyed the Whitman Feed Co. plant 8 miles east of here in the Gila Valley. Estimated loss to building, equipment and feed supplies was $50,000. The interior of the corrugated steel and frame building was virtually stripped by the fire. Nearby silos and feed stocks escaped damage.


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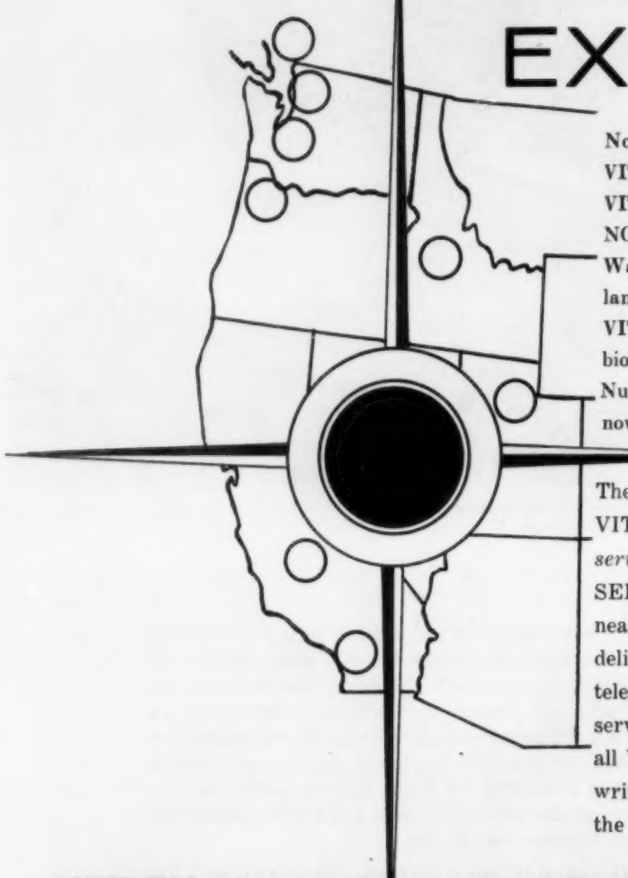

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The new northwest locations will permit VITREN to give *better and quicker service.* In keeping with VITREN's SERVICE POLICY feed mills in the area near a VITREN OFFICE usually get delivery the same day on a morning telephone call. Distant mills get overnight service. If you are not familiar with all VITREN SERVICES, telephone or write for a representative to give you the complete story.

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# Farm and Feed Salt

## '59 forecast: demand for free-choice salt to increase!

Many well-known animal nutritionists, noting a growing awareness among farmers of the need for salt and minerals in healthy livestock, predict an increased demand for free-choice salt. Retail outlets can profit from this continuing trend by handling the popular Sterling Farm Salt products for resale.

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- The College of Veterinary Medicine at Colorado State University reports that 4% salt in a total sheep ration prevents urinary calculi by making the animals drink more water.
- Phenomenal growth in livestock and poultry production is forecast for the coming decade. There'll be a need for 45 million laying hens every year and about 125 million broilers. Also needed will be 3 million extra milking cows . . . 5 million extra beef cattle . . . and 10 million extra hogs.

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# Causes and Prevention of Erratic Values for Feed Microingredients

By J. F. Mahoney
Chemical Division
Merck & Co. Inc.

Substantially all formula feed manufactured today contains a number of different microingredients, substances such as the vitamins, antibiotics, drugs, amino acids, antioxidants and trace minerals which are added in quantities of not more than a few pounds per ton of feed.

The quantitative and uniform incorporation of these microingredients in feed is a major objective for all quality-conscious feed manufacturers.

This objective is particularly important with those microingredients which are classed as drugs, since the feed manufacturer is required to guarantee the drug content of each batch of feed. In addition, some drugs appear to be efficacious over only a narrow range in concentration, raising the possibility of low, ineffective levels or high, toxic levels in those instances in which the drug is not uniformly distributed in the feed.

In the case of microingredients other than drugs, variations from the desired level in feed pose problems which are also important, although perhaps less acute. At best, the failure to incorporate any microingredient properly in feed is a failure to get full return in microingredient value.

The feed manufacturer who is analyzing his production regularly for its microingredient content may on occasion find values significantly different from the expected levels. These may arise from a number of different sources. In this article we have provided a list of causes as an aid in helping the feed manufacturer to determine the reason for his particular problem and to apply corrective measures.

**I. THE FEED SUPPLEMENT:** The term "feed supplement" is used here to mean a formulation containing one microingredient or several microingredients in combination, to be added to feed at a rate of from one to several pounds per ton. This is the type of product by which most microingredients are supplied to the feed industry. The proper formulation of the feed supplement can do much to insure that microingredients are provided in physical forms most conducive to rapid and uniform incorporation in feed.

With commercial practices today, the feed manufacturer rarely takes the time to examine and analyze the feed supplements which he purchases prior to their use. Procuring these supplements from an experienced and reputable manufacturer still provides the best assurance that microingredients will be present at the guaranteed levels, that the supplements will be freshly prepared, well mixed, and will not segregate, that the less stable microingredients have been properly formulated, and that the supplement has been adequately packaged.

**A. Quantity of Microingredient:** If an error was made in preparing the feed supplement, the microingredient quantity may vary from the guaranteed level. A reference sample of every batch of feed supplement should be retained in the event that future analyses are needed.

**B. Poor Formulation:** A feed supplement which is poorly mixed, very dusty, or prone to segregation may show a non-uniform microingredient content. Careful examination of the reference sample of feed supplement will usually detect non-uniformity in appearance. This can be verified by chemical analysis.

**C. Microingredient Instability:** Several of the microingredients which are added to feeds are compounds which are basically unstable. Stability problems are usually met by providing an excess of the microingredient in the feed supplement formulation sufficient to offset the anticipated decomposition prior to the time the feed supplement is used, or by stabilizing the microingredient through a variety of techniques. However, if the feed supplement is held for an unusually long time, or if it is stored improperly and exposed unduly to high temperatures and high humidity, excessive decomposition of certain microingredients may take place.

It should be noted that overages for less stable microingredients in feed supplements are not ordinarily provided to compensate for any additional decomposition which may occur after the supplement has been added to the feed through pelleting or long storage.

**D. Moisture Pickup:** Certain microingredients are hygroscopic, choline chloride being an outstanding example. All feed supplements containing choline chloride will pick up moisture from the air except in the driest of climates. This is not ordinarily a problem with supplements packaged in unopened moisture resistant bags, but moisture pickup can be appreciable if partly used bags of supplement are left open for several days, and will act as a diluent in reducing microingredient concentration.

All partly used bags of supplement should be resealed promptly to prevent moisture pickup, spillage and contamination. It should be borne in mind that highly absorbent carriers are used for choline chloride supplements, and the addition of 10-15% moisture may make no change in physical appearance, thus giving a misleading impression of dryness.

**II. THE PREMIX:** Supplements added to feed at a rate of 1-2 lb. per ton cannot be expected to blend as rapidly as other ingredients used at much higher levels.

Where time for mixing feed is short, and this holds for most feed mills, the preparation of a premix from the feed supplement is strongly recommended. The premix should be of sufficient dilution so that 10-25 lb. are used per ton of feed. Several factors in the preparation of the premix can potentially lead to variations in microingredient assays.

**A. Incorrect Weight of Ingredients:** Personal errors, such as an incorrect calculation of the desired weight of supplement or a misreading of the scale, can be reduced by providing a system of independent checking. Scales should be checked frequently to make sure accuracy is satisfactory.

**B. Dust Losses:** Care should be taken that the draft to the dust collector is correct to the point where there is no danger of part of the supplement itself being sucked away during the charging or mixing operations.

**C. Adherence to Equipment:** Precautions must be taken in order that significant quantities of the supplement are not held up on charging chutes, hoppers, etc., by bridging or electrostatic adherence. Flushing a portion of the carrier through this equipment after the supplement has been added is a good practice.

**D. Non-Uniform Premix:** Erratic values for microingredients in feed may result from the use of a premix which is not uniform. Adequate mixing of premixes is of paramount necessity. If the supplement contains lumps or cakes, these must be broken up before the supplement is charged, unless there is assurance that these lumps will disintegrate rapidly in the blender.

The choice of a carrier for the premix is extremely important. Good premixes cannot be prepared with carriers which will not mix uniformly with the carrier of the supplement. Generally speaking, ground corn meal, corn distillers dried grains and wheat middlings make good carriers for premixes. Soybean meal is usually a poor carrier because the smooth, plate-like particles are difficult to mix uniformly with grains of different structure.

**E. Dilution with Residues:** Care must be taken that the premix is not diluted with residual feed left in the

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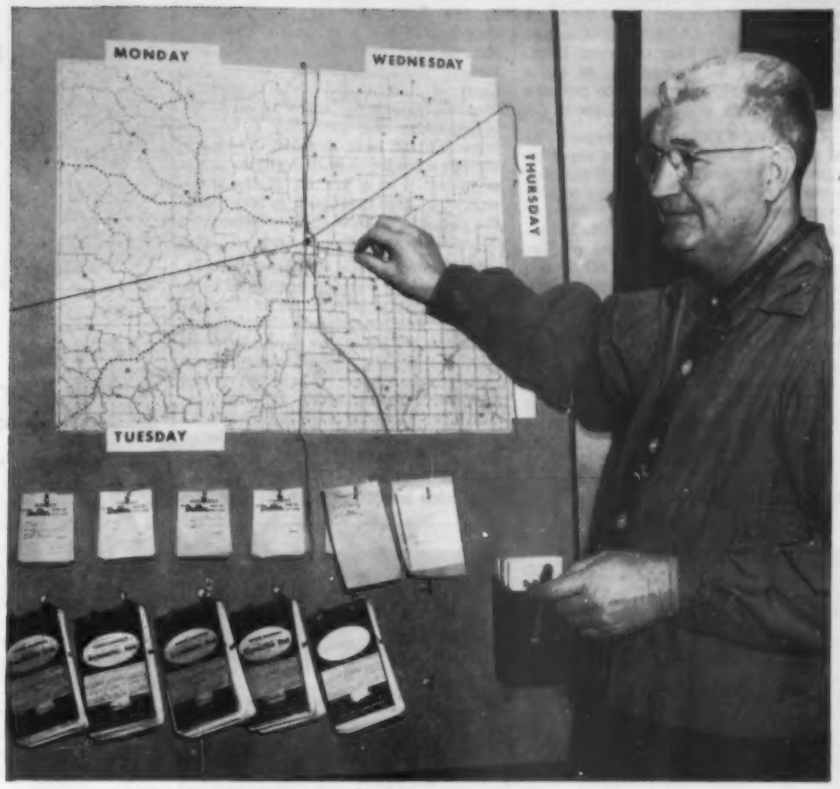


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blender or in the equipment used to convey the premix out of the blender. This can be a troublesome problem in large mills with long conveyor lines. It can also be a problem in mills using the same equipment to prepare both premixes and finished feeds.

**III. THE FEED:** The preparation of finished feed from premix provides exactly the same opportunities for errors leading to variation in microingredient values as in the case of the premix preparation itself. Incorrect weight of premix, losses of premix to the dust collector, adherence of premix to charging equipment, insufficient mixing and dilution of the feed with residues are all potential sources of error. Several points, however, deserve special mention.

**A. Addition of Premix by Feeder:** Where feed is manufactured by a continuous process, the characteristics of the feeder used to proportion in the premix should be thoroughly understood, so that if necessary, proper compensation can be made for variations in feeder discharge rate caused by (1) the height of premix in the hopper, (2) the precision of the machine itself and (3) batch-to-batch variations in premix properties. The feeder should, of course, be inspected frequently to make sure clogging and bridging are not occurring. It is also important to bear in mind that even though a feeder may deliver the proper quantity of a premix, if the total weight of feed produced is incorrect, the concentration of the microingredient will be in error.

**B. Thoroughness of Mixing:** If one mixes feed for varying lengths of time and analyzes a large number of samples for microingredient content, distribution curves of the type shown in Figure 1 are obtained. The significant point to recognize is that the peaks of these curves (which are the values most likely to be found by assay) are invariably below the calculated average, although the peaks approach this average with prolonged mixing. It is also important to note that the range in values narrows as the feed is more thoroughly mixed.

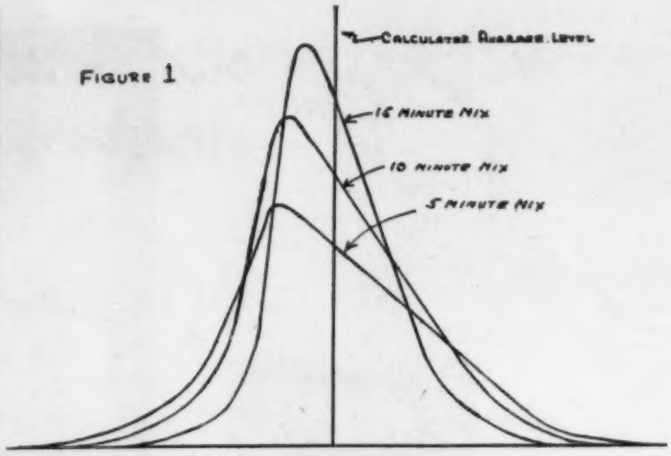


FIGURE 1

MICROINGREDIENT DISTRIBUTION IN LABORATORY MIXED FEED

Production schedules in many feed mills permit only a very few minutes of actual mixing in the blender. The ultimate in microingredient distribution may be approached, but is rarely achieved. This means that the feed manufacturer should expect that his average microingredient content will generally fall below the calculated average content. If the amount of this difference is small, it may be disregarded. In the event of an appreciable difference, three types of corrective measures should be considered:

1. **The use of more dilute premixes.** The principal purpose for preparing a premix is to reduce the time needed for finished feed blending. The more dilute the premix, the more rapidly can uniform distribution of the microingredient in feed be accomplished.

2. **More efficient blending.** Increased time of blending, more rapid rotation of the blender ribbons, and the installation of baffles in the blender should be considered where the installation permits.

3. **Overages.** The use of small overages for certain microingredients may be the simplest way to insure that the guaranteed levels for microingredient content are achieved. The use of large overages to compensate for poor feed mixing efficiency should not be tolerated on anything more than a temporary basis until other corrective measures are instituted. The use of large overages is not only wasteful and costly, but it does not solve at all the problem of the large variation or range in assays which

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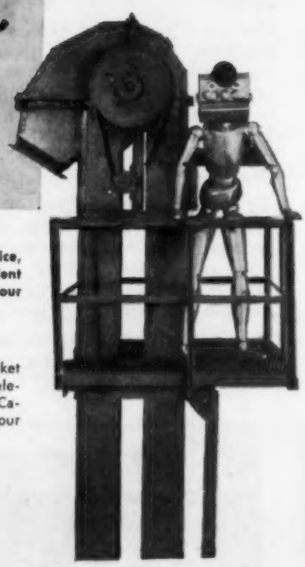

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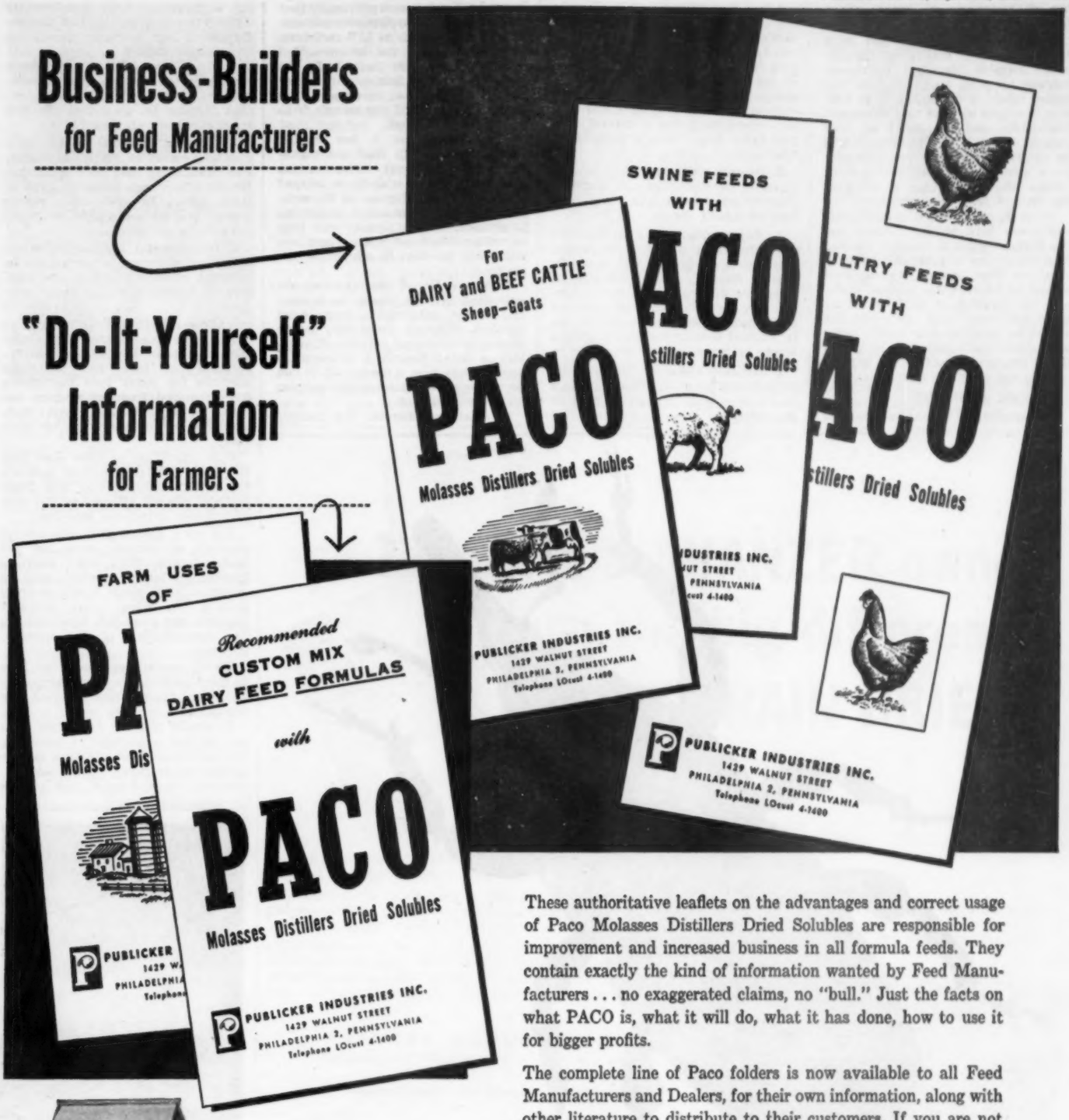


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are characteristic of poorly mixed feed.

**C. Residues:** In many feed mills the mixed feed will pass through surge hoppers, elevators, conveyors, storage hoppers, weigh hoppers and scales before it is bagged. It is difficult to empty some of this equipment completely, and the batch of feed passing through this equipment will be diluted with the residue. This may be a source of low microingredient values where a change is made in the type of feed being produced.

When such a change is made, the equipment between the blender and the bagger should be freed of residual feed insofar as is practical. In addition, the first several bags of feed should be set aside for gradual work-off. The amount of feed to be set aside will vary with the mill but should be carefully determined, using as a guide the consistency in values for a microingredient which can be rapidly and precisely assayed.

**IV. THE ANALYSIS:**

**A. Sampling:** The analysis carried out on a feed sample will give a true microingredient value only for that particular sample. Whether this value can be assumed to hold for a bag of feed or a batch of feed is a function of the care taken in collecting the sample. Any sample supposed to be representative of a batch should be a well-mixed composite of several samples taken from various portions of this batch.

**B. Sample Deterioration:** Several types of deterioration can occur in samples prior to analysis which may lead to invalid assays.

1. **Segregation.** Some samples of concentrates or premixes frequently may segregate in handling, due usually to disparity in particle size or density of the grain components. Special care should be taken in sampling such products, and the analyst should be advised to mill the entire sample before taking an aliquot for assay.

2. **Moisture Changes.** Samples held in ordinary paper envelopes or bags may lose or gain in moisture content depending on atmospheric humidity. It has been mentioned previously that choline chloride supplements can easily pick up as much as 15% moisture. Moisture transfer can be prevented by storing samples individually in wide-mouth glass bottles with screw caps. Polyethylene envelopes are convenient to use if the sample is to be shipped or mailed.

3. **Decomposition.** A few of the microingredients in feed are unstable, and significant decomposition may occur if the analysis is delayed for a few weeks. Storage of the sample (in sealed container) under refrigeration or in a freezer will help to reduce this decomposition and permit more freedom in scheduling assays.

4. **Age.** A few of the microingredients used in feed appear to become less easily extractable from aged samples, although there may be no change in biological activity. This effect is not ordinarily a problem in samples less than a month old. It can be minimized by holding the samples under refrigeration.

**C. Analytical Errors:** The analysis for a microingredient is inherently difficult because of the low concentration of the microingredient, the complicated nature of the feed substrate and the involved procedures necessary to separate the microingredient in a form sufficiently pure that it can be measured. Several types of errors are possible.

1. **Personal.** Included in this category are errors in weighing, reading and calculating, and poor technique. Repeat assays may show up some of these errors. In some cases repeat assays by a second analyst or second laboratory are helpful.

2. **Instrumental.** Malfunction of the analytical instruments can usually be detected by analyzing standard samples of known microingredient content.

3. **Proper Method.** One has only to look at the work carried out under the auspices of the A.O.A.C. to appreciate the fact that analytical methods for many feed ingredients have required frequent revision because of imperfections found only after the method was in use for some time.

It is important to make sure that the latest official analytical methods are being employed and that these methods are not affected by any new ingredients introduced into feed.

For some microingredients, official methods of analysis have not yet been adopted. With other microingredients, alternate methods may be available, particularly in sample preparation. In some cases, different methods are employed depending on the concentration of the microingredient.

These possibilities should be kept in mind particularly when comparing analytical results from different laboratories.

It should also be recognized that any method is intended to determine the microingredient within a certain concentration range. If the microingredient concentration lies outside

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**JOINS BREMCO ALFALFA MILLS**—John A. Poppe has become a member of the firm of Bremco Alfalfa Mills, Inc., New Bremen, Ohio, it has been announced by Arnold H. Poppe, his father and president of the firm. John Poppe attended Ohio State University, and he is a past president of the Ohio Future Farmers of America. Bremco Alfalfa Mills, Inc., produces dehydrated and suncured alfalfa meals, and it has inaugurated a new method of dehydrating and pelleting forage crops such as sorghums and corn. The firm produces alfalfa and forage crops on a sizeable acreage of its own and plans to expand its farming operations during the 1959 season, according to Mr. Poppe. Ralph Maby has severed his connection with Bremco Alfalfa Mills, Inc., it was announced.

this range, the method may not be valid without modification.

**D. Interpretation of Results:** The precision of any set of results—that is, the degree to which values agree—is a function not only of the skill of the analyst but of the method itself.

Methods used for determining microingredients may vary widely in precision. Microbiological assays are generally much less precise than chemical analysis, and show greater day-to-day variations. In interpreting analytical results, it is important that the precision of the assay be previously established in order that one can distinguish between variations in values which are a legitimate cause for concern, and those which arise from precision limitations and may be considered entirely normal.

Some methods of analysis require the application of a correction factor in order to obtain a true result. When the feed contains an ingredient which cannot be completely separated from the microingredient being determined, a positive or negative correction is needed, depending on whether the impurity depresses or accentuates the measurement of the microingredient.

The amount of the correction may be substantially independent of the type of feed being analyzed, or it may vary with the type of feed. Some methods require the application of both positive and negative corrections.

In some cases, the microingredient cannot be completely separated from the feed, and a positive correction is required to compensate for the imperfect extraction. This correction may vary with the concentration of microingredient and the form of the feed being analyzed.

Much of the potential difficulty which could arise through failure to appreciate precision and accuracy limitations can be avoided if the analytical chemist or his supervisor accepts the responsibility of providing routinely, in addition to assay results, the interpretation of these findings for the benefit of those less familiar with this type of problem.

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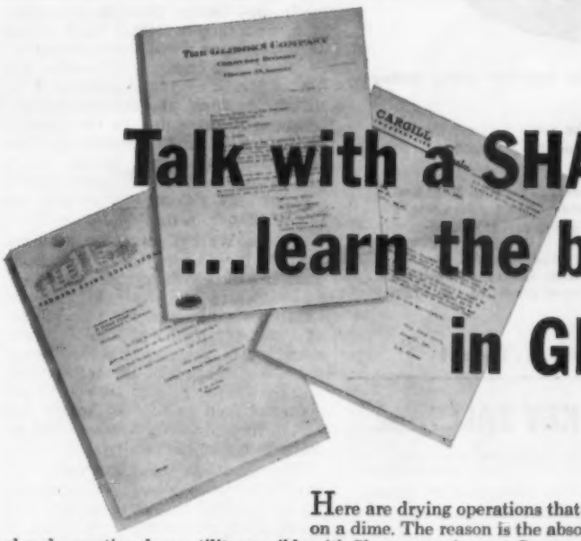

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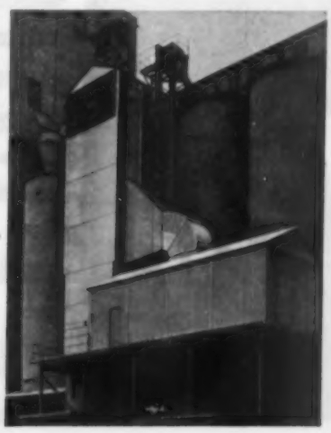

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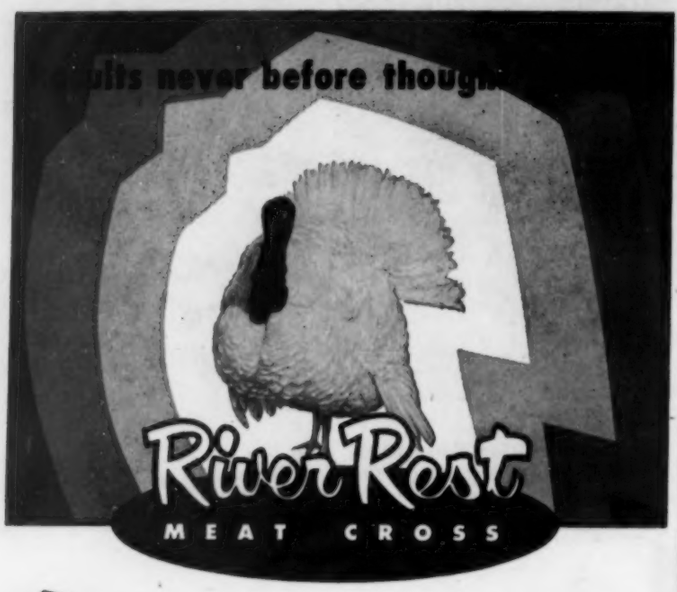


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## Tranquilizer Effect In Lamb Experiments Reported by Scientists

ST. PAUL—Studies concerning the effect of tranquilizers on lambs during the fattening period and during shipment were recently reported by the Institute of Agriculture, University of Minnesota.

Researchers reported that these tests indicate that tranquilizers apparently do not reduce "shrink" in lambs during shipment and that they do not cause lambs to gain any faster when fed during the fattening period.

In one trial, Dr. R. M. Jordan, associate professor of animal husbandry, and other researchers split 81 feeder lambs at Greenbush, Minn., into three groups. They injected 27 of these lambs with 100 mg. each of a tranquilizer called chloropromazine. A second group of 27 lambs received a 12-mg. injection of perphenazine tranquilizer and the rest got no tranquilizer.

The research men weighed the lambs just before treating and shipping, and then weighed them again 22 hours later when they arrived at St. Paul. The trip was 325 miles. All lots of lambs averaged close to 6 lb. shrink per lamb, and the tranquilizer treatments, according to the results, had no effect on this shrinkage. The researchers also said lambs which had been treated with tranquilizers did not regain their lost weight any faster than non-treated lambs.

At the West Central Experiment Station, it was reported that a tranquilizer called hydroxyzine did not increase gains in fattening lambs. Lambs that received the tranquilizer at 1 mg. per pound of total feed averaged .41 lb. per day. A second group fed a combination of the tranquilizer and three fourths mg. stilbestrol per pound of feed gained .38 lb. per day and untreated lambs averaged .43 lb. daily gain, the university reported.

The livestock scientists said one reason for the slower grains among lambs getting the combination was lower feed consumption—a third of a pound per day less than those untreated or not getting the stilbestrol.

In other tests, adding chloropromazine and trifloroperazine to the feed also did not affect gains, according to the researchers.

## Newcastle Boosters Advised in Georgia

ATHENS, GA.—Georgia poultrymen are being advised to give booster vaccinations to their laying flocks as a safeguard against Newcastle disease. Recent outbreaks of the disease were cited by Dr. S. C. Schmittle, director, poultry disease research, University of Georgia, and Dewey McNiece, extension poultryman.

"Many poultrymen have neglected to revaccinate their laying flocks after egg production begins and their flocks could be affected by the disease," Mr. McNiece said. "Following vaccination, immunity against the disease usually does not last more than six months. Laying flocks not vaccinated during the past four to six months should be vaccinated. This should be done by using the dust, spray or water method, but not by the wing web method."

Mr. McNiece noted a mild drop in egg production following the booster vaccination indicates the flock was susceptible to the disease.

"Flocks with low immunity may drop in egg production and egg quality may be affected after vaccination, but this will not be as serious as a natural outbreak of the disease," the poultryman pointed out.

## Warns of DDT in Stalks

LITCHFIELD, N. H.—Dr. James G. Conklin, entomologist, University of New Hampshire, Durham, has warned that DDT-treated corn fodder may carry the DDT residue through into milk for human consumption.

Addressing the Hillsborough County Vegetable Growers Assn. here, he said dairymen should not be allowed to feed DDT-treated corn stalks to their herds. Dr. Conklin reported that last fall it was found that sweet corn fodder being fed to cattle in southern New Hampshire proved to have 21.8 parts per million of DDT residue.


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## RESEARCH

(Continued from page 36)

silages may be rather substantial in comparison with that from corn silages. For example, it was shown by Fitch and Wolberg (1934) that feces of cows fed Kansas Orange contained 42.9% of the grain kernels originally fed.

Another question frequently asked of feedmen is: "How good is the grain in the feces of cows for the pigs following?" The Michigan work indicates little actual loss of nutrients occurs in the grain of silage which is still present in the feces. Fairly recent work by Illinois (1957) also shows that pigs fed equivalent amounts of washed corn which had passed through full-fed steers on whole corn gained fully as well as those on regular whole corn.

●

### Timely and Worth Noting

Effective methods are now available for the control of mastitis caused by Streptococcus agalactiae when a realistic herd management program is used under the direction of a competent veterinarian. Although these bacteria are responsible for a large share of uncomplicated herd conditions, it is also true that many other organisms are responsible for stubborn herd conditions and individual cases which are not very amenable to treatment.

One of the most baffling organisms to treat from the veterinary standpoint has been Staphylococcus aureus. When antibiotic agents or other mastitis treatments are used, this organism and others which normally do not form a large percentage of mastitis cases, increase considerably over the levels expected in untreated herds—further complicating the picture. Under these conditions it has been the experience of some veterinarians that Staphylococcus aureus may be responsible for from 10% to 60% or more of the cows infected with mastitis. Unfortunately, the condition often becomes chronic, with acute stages of the disease manifesting themselves in certain lactation periods.

The French workers have previously reported (1941) that the resistance of dairy cattle to staphyococcal mastitis could be increased by vaccination with staphylococcal toxoid. Spencer et al. (1956) reported in this country a preliminary observation on immunization of animals against Micrococcus pyogenes.

Slanetz et al. (L. W. Slanetz, C. H. Bartley and F. E. Allen; Journal of the American Veterinary Medical Association, Vol. 134, No. 4, pp. 155-161, February 15, 1959) of the University of New Hampshire now report the results of a five-year study with vaccination with staphylococcal toxoid or bacterin-toxoid in dairy cows. The spread of the infection was almost completely prevented in the vaccinated cows and there was also a marked reduction in the number of acute flare-ups in infected cows over periods up to 18 months. However, the vaccination did not result in the recovery or elimination of the infection in the majority of quarters with well-established chronic infections.

## Bulk Tanks Installed

PORTLAND, ORE. — Square bulk feed tanks, two divided into halves and two into quarters, have been installed by the feed division of the Dairy Cooperative Assn. An association spokesman said the equipment, made by Butler Manufacturing Co., was installed to increase capacity and save space. Self-cleaning and automatically controlled, the facilities were installed by Larson & Baardson of Portland.

### NEW COOPERATIVE FORMED

VISALIA, CAL.—A new cooperative group composed of poultry feeders began functioning recently under the name of the Visalia Cooperative Feed Assn. Principal objective of its members is to obtain better feed prices by buying large lots of feed, officials said. The association is composed of poultry feeders whose requirements top 210 tons of feed per month.


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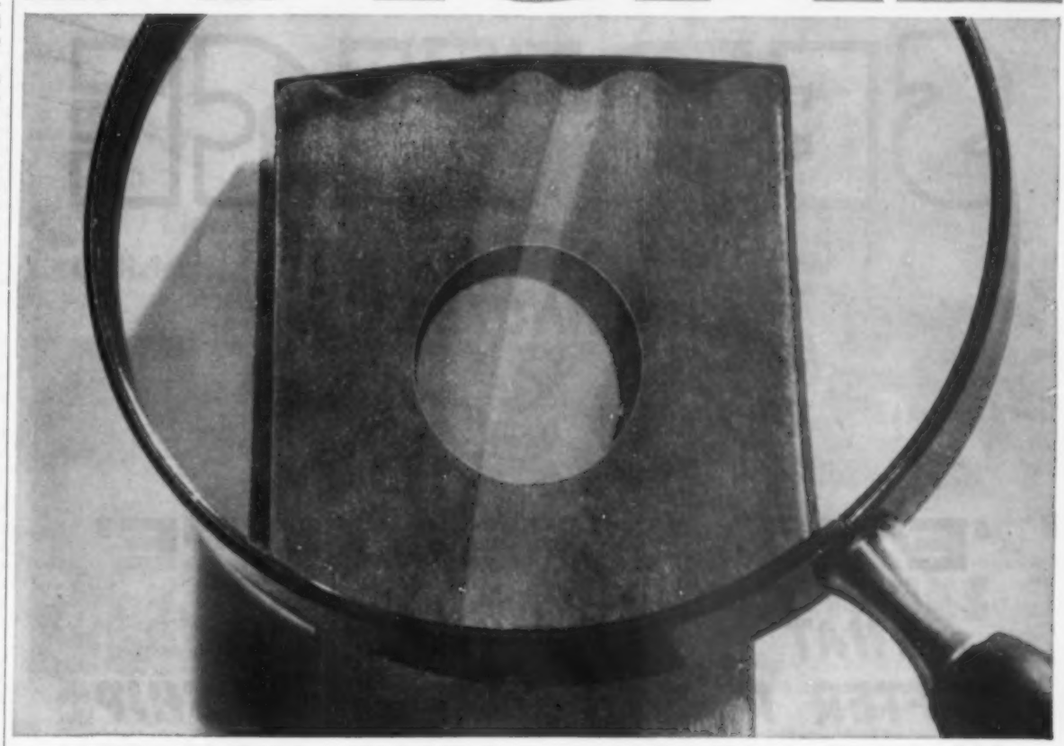

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# JOE BROOKS

BY AL P. NELSON

## No Man Has a Corner on All Ideas

Some farmers come into a feed mill or store and give their orders without cracking a smile. If you ask them questions, in order to draw them out, they'll answer "yes" and "no" and never a word more.

Then there are other farmers who laugh and joke and who like to kid the feed dealer and his employees as well as all other farmers within earshot. Still another type is the farmer who is pretty serious and who is not one whit interested in talking about anything except farm prices, land prices, feed costs and things like that.

Now Gil Buckeridge was not quite one of these. Sure, he wore overalls, heavy boots, mackinaw and battered felt hat; he bought feed, fertilizer and other farm items, too, but when Gil started to talk, he didn't talk like a farmer. In fact, from his talk, you'd think he was a college professor—the fancy terms he used.

Joe Brooks liked to have Gil Buckeridge visit his store because Gil was a fellow who read practically every farm magazine and bulletin that he could lay his hands on. Besides that he read many books, and was seen frequently in the local library. Gil could get up at any farm meeting and talk extemporaneously on almost any farm subject and interest an audience.

When it came to making money from farming, Gil was only partly successful. He was not in debt, neither was he rich. But he spent so much time thinking and reading, folks said, that he often short circuited his farming time.

Gil was a medium sized fellow, sporting a little black mustache and a goatee, and of late, a little pot. He had a slow manner of speaking, and when he sat down in a chair at Joe Brooks' store, within a few minutes from five to ten farmers would be standing around talking to Gil or listening to his wisdom.

"Well, Gil," someone would ask, "what's new in farming?"

And that would start Gil off, with a pleased Joe looking on or listening, for the longer farmers stayed in the store, the more buying ideas they usually got.

"I tell you," Gil said one day, crossing one overalled leg over the other, "some strange things are taking place in agriculture. We farmers have to think more than we used to or we are going to be brain-trusted out of business."

"We'll leave the thinkin' to you, Gil," said Sandy Anderson, "and we'll do the farmin'."

### Must Start Thinking

"You won't be farming long if you don't start thinking," Gil came back. "When you got a farm with an investment of $40,000 to $60,000 and part of it in a big mortgage with heavy interest, thinking should begin before you start farming. Now look what they're doing in Iowa. They're tryin' to grow light burley tobacco. Eight test plots yielded pretty well and graded surprisingly well. Maybe the Midwest will be raising more tobacco. Wisconsin farmers have a nice tobacco crop in the southern part of the state."

"You're right, Gil," said one farmer. "The South is raising porkers in parlors and competin' with us. Maybe we can raise tobacco and compete with them."

"Now you take this matter of integration," went on Gil, "no use laughing at it. No use getting mad that it may take independence away from a farmer. That isn't using your head. The thing to do is for us to learn what the customer wants in lean meats and quality eggs and then set out to produce for that market. When a fellow does that, he can start to compete with the integrators, or join 'em."

"And consult with your feed dealer as to the best way to use feed in your poultry, hog or dairy program," put in Joe glibly.

"Hey, foreigner," chuckled Pete


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Hawkins, "you stay outa this. You're prejudiced."

"Most farmers don't read farm papers and ag bulletins thoroughly enough," Gil said. "If they did, they could save labor and increase income. But many farmers go on doing the same things year after year from habit. And habit can be costly."

"How come, Gil?"

Gil Buckeridge sighed. "No matter what you're doing, never be satisfied. Ask yourself, how can I do this job quicker and better and make more money doing it? One Ohio farmer claims that if you put superphosphate on the bedding in your dairy barn, it cuts down the odor from steaming manure in the barn and improves the manure as a fertilizer. Says it only takes half the bedding, too. How many of you farmers are doing that?"

No one raised his hand.

"I see farmers using the scoop on their farms today more than they used to," Gil said. "They should mechanize or quit farming full time and do part time farming with a side job. A man has just so much physical energy. Why use it up on $1 an hour work when you can think at higher hourly rates?"

"I use my head," said one farmer. "I use my cash to pay Joe's feed bill before 30 days and get my 2% discount. To do this I let my department store bills slide a little. You don't get much discount on them, only my old lady kick. She don't get the stamps if I don't pay by the 10th."

Many farmers chuckled, for this was a common experience.

"Don't laugh at these college professors who are trying new things for your benefit," Gil advised. "Lots of farmers laughed at those Purdue professors who conducted the work experiments and tied string along the paths farmers went each day handling chores. Wiseacres laughed about tripping over the string. But those professors showed us farmers could save lots of steps by planning our chores better, locating feed where it would require minimum of steps."

"But somebody has got to pay for improvements, Gil."

Gil Buckeridge shook his head. "No, the greater production pays for it. Farmers who have the right mechanization, proper records and work layouts, get along with less labor, produce more and spread the per-hour-labor-cost over many dollars. Why did we leave it to the feed dealer and manufacturer to figure out a lot of improvements for us? We were lazy. We didn't think enough. We should have presented dealers with a list of products and services we want. It's time we got busy and did some more thinking."

"Gil, why don't you start a farm school? Hold your sessions right here in Joe's store once a week. He won't charge you rent, and if we get to be better farmers and make more money, we'll have more to spend at Joe's and we can charge more, too."

Gil smiled. "Now you are thinking, Fred. I might do just that. Joe and I will have to talk this over and work out a program that would suit him and me and you."

"Glad to," Joe said. "I'll be glad to enroll as your first student. I learn lots of good sales stuff just listening to you. . . . Coffee's ready. Any of you students ready for it?"

## Service Awards Given

AUGUSTA, GA.—Five persons received service awards during a recent ceremony at Feedright Milling Co., Augusta. They were celebrating an aggregate of 187 years with the firm.

Receiving awards were R. E. Barinowski, president, and Grady Brown, assistant, who have been with the firm since 1915; and E. J. Richards, Clarence Pugh and Dave Harris, all of whom have been at the plant since 1923.

### JOINS STOCKTON EXCHANGE

SAN FRANCISCO—H. V. Nootbaar & Co., Pasadena, became a new member of the Stockton Grain Exchange recently. The company maintains offices in Riverbank, Bakersfield and Pasadena.


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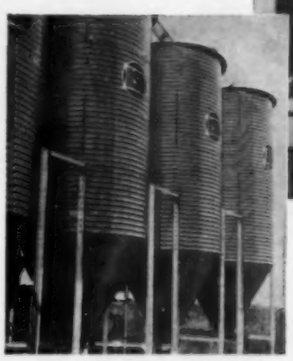
Missouri Feed Mixer Doubles Volume Quickly With New Plant Utilizing...



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| 2.8 | 139 | 10′ 2″ |
| 4.3 | 215 | 12′10″ |
| 5.8 | 290 | 15′ 6″ |
| 7.3 | 365 | 18′ 2″ |
| 6 FT.—SIDE DRAW | | |
| 3.8 | 188 | 14′ 8″ |
| 5.3 | 264 | 17′ 4″ |
| 6.8 | 339 | 20′ 0″ |
| 8.3 | 415 | 22′ 8″ |
| 9 FT.—CENTER DRAW | | |
| 11.0 | 552 | 15′11″ |
| 14.4 | 718 | 18′ 7″ |
| 17.8 | 888 | 21′ 3″ |
| 21.1 | 1055 | 23′11″ |
| 24.5 | 1225 | 26′ 6″ |
| 9 FT.—SIDE DRAW | | |
| 14.4 | 722 | 22′11″ |
| 17.8 | 890 | 25′ 7″ |
| 21.1 | 1058 | 28′ 3″ |
| 24.5 | 1226 | 30′11″ |
| 28.0 | 1395 | 33′ 7″ |

BS&B BULK FEED TANKS

Feeders Grain & Supply, Inc., after serving feeders and farmers in the Bowling Green, Mo., area for 20 years, recently expanded their operations with a new custom grinding and bulk feed plant.

Reasons: To increase overall tonnage by offering feed in bulk. To do custom grinding, mixing, pelletizing and shelling. To operate more profitably by eliminating labor and materials costs involved in bagging.

Contractor for the new plant was Mr. Frank Brooks, of Belleville, Illinois. Plant equipment includes a battery of eight new BS&B Bulk Feed Tanks, with a total capacity of 57.4 tons. These tanks are used for storing grain and feed concentrates, and for grinding, mixing, pelletizing and shelling operations.

Company President Ervin F. Henderson says, "Thanks to this new bulk feed and custom grinding operation, our volume of business *doubled* before we had even advertised the opening of the plant!"

To fortify his growing bulk feed business, Mr. Henderson handles BS&B Bulk Feed Tanks in a range of sizes that will fit any customer requirement.

You, too, can build a more profitable feed business by converting to bulk operations with the help of BS&B Bulk Feed Tanks. For complete information, contact the BS&B Man serving your area . . . or write to us direct.

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## DuPont Nutrition Book Wins Printing Award

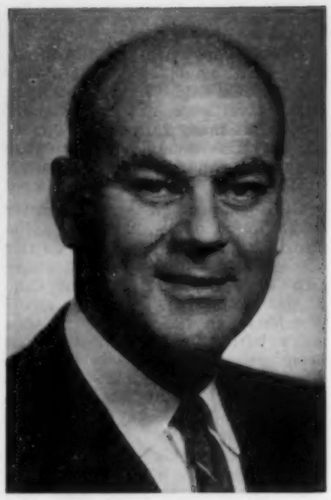
WILMINGTON, DEL. — The new digest of research on "Urea and Ruminant Nutrition," published by E. I. du Pont de Nemours & Co., Inc., Wilmington, has received a "best of the year" award for its unique jacket, according to Francis M. Jornlin, sales manager for the company's nitrogen products section.

The jacket is embedded with a strawlike material to enhance the ruminant nutrition theme. The award was given by the Delaware Valley printing industry in conjunction with National Printing Week.

The 80-page book contains the latest data on ruminant nutrition, and emphasizes the efficiency and practical application of urea in ruminant feeding.

Data on natural sources of urea as well as synthetic urea as a source of protein in ruminant rations are included, plus information on carbohydrates, trace minerals, proteins, and the role of fatty acids.

Copies are available at $2.50 each from W. F. Morris, Polychemicals Department, Du Pont Co., Fairfax, Wilmington 3, Del.



John M. Fox

**AFMA KEYNOTER — Keynote speaker for the 51st annual convention of the American Feed Manufacturers Assn. May 11-13 in Chicago will be John M. Fox, president, Minute Maid Corp., Orlando, Fla. His topic will be "What It Takes to Be a Manager."**

## N.H. Quality Egg Plan Being Promoted

CONCORD, N.H.—The New Hampshire Planning and Development Commission is cooperating with the state's department of agriculture and $4 million poultry industry in promoting the New Hampshire "Seal of Quality" egg program, it has been reported by Joseph H. Bodwell, agricultural assistant to the planning and development commission.

He said the commission is making available printed material, placed inside the egg cartons, showing egg users how to recognize high quality eggs. The material features pictures showing that top quality eggs, both Grade AA and Grade A, "have a high curved yolk banded by thick clear white and surrounded by thinner white."

**JOIN STOCKTON EXCHANGE**

STOCKTON, CAL.—Gunter Bros., Morgan Hill, Cal., and the Hayward (Cal.) Poultry Producers Assn. have joined the Stockton Grain Exchange, it has been announced.

LIKE TOPSY . . . THEY JUST GROW

*We certainly won't attempt to explain the alarming growth rate that Topsy seemed to achieve . . . it's enough to say, "She just grew". To feed users, however, it isn't this simple. "Growth" is without question the most important element in livestock feeding. It is a constant source of study by manufacturers, colleges, experimental stations to arrive at the perfect feed balance to assure greater growth at a lower cost per pound.

These studies have revealed stimulating Unidentified Growth Factors that are found only in a meat and bone meal diet. They also show that 50% meat and bone meal provides: 32 times the calcium, 6 times the phosphorous, 2 times the riboflavin and niacin, 10 times the fat, and 1.14 times the protein found in substitute vegetable products.

Because of this greater knowledge, more and more feed manufacturers and millers are turning to meat and bone meal as their choice for protein in the practical balanced diet. It is easy to use, it is economical, it assures the right balance of proteins, and highest productivity. The feeder knows that this adds up to better conversion, lower cost per pound of weight gain and INCREASED GROWTH RATE.

Because the demand for feed with meat and bone meal is ever-increasing the wise feed manufacturer is switching to this source for protein. He gets better prices and more sales because they do more for the feeder . . . giving him greater profits through better results.

Whether you are large or small, you can use meat and bone meal easily. The mixing is simple and economical, since the meat meal is received pre-ground and ready to add, with other ingredients, to the feed.

Write for our free booklets that fully describe the benefits found in meat and bone meal. This valuable information will help you increase your sales and supply you with information to pass along to your customers.

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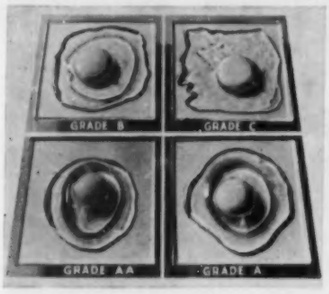
## No. 7442—Plastic Egg Models

Plastic egg models, showing the four broken-out grades and the various quality differences, have been announced by the Tyrone Equipment Co. The egg models are for use as




visual aids to commercial and educational groups, the company said. According to company literature, more than two years were spent developing a realistic, non-deteriorating model. Details on price and specifications are available by checking No. 7442 on the coupon and mailing to this publication.

## No. 7438—Dryer Leasing Plans

Daycom, Inc., manufacturer of Arid-Aire Grain Dryers, announces two long-term lease plans for both the model 4 and model L dryers. Under the new plans, according to company literature, the customer can rent the dryer and at the end of the fifth year will have the option to buy. The customer eliminates the necessity for paying the interest as would be the case if he bought the unit on time, the company says. Advantages of the long term lease listed by the company include: preservation of working capital, removal of the necessity to borrow against the regular line of credit to make capital improvements, quick depreciation and low cost financing. For complete information, check No. 7438 on the coupon and mail to this publication.

## No. 7450—Enzyme Feed Fortifier

An enzyme product called "Zymo-Pabst" is now being marketed by the Pabst Brewing Co. According to the company tests with cattle showed that 16% less feed was required to produce 18% weight increase. The fortifier contains three enzymes—protease for protein digestion, amylase for starches and gumase to help break down plant gums. In the tests, after a 54-day feeding period, the company says, cattle fed with Zymo-Pabst averaged 22.73 lb. heavier per head than the control-fed cattle. At the same time, the Zymo-Pabst cattle required 6.71 lb. of feed per pound of gain compared to 7.34 lb. of feed for the control group. For details check No. 7450 on the coupon and mail to this publication.

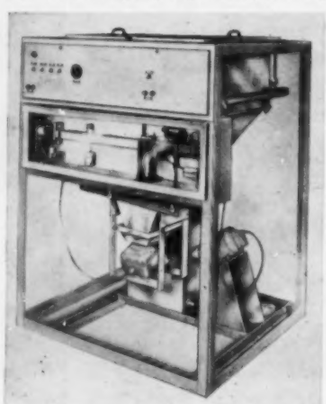
## No. 7444—Stilbestrol Product

Eastern Laboratories, Inc., announces "Eastrone," a stabilized solution of diethylstilbestrol for use in the drinking water of chickens. Ac-

cording to company literature, the product has been tested in the laboratory and in field trials on a large number of birds and tissue studies by an independent testing laboratory found the product "wholesome and acceptable." The tests showed that Eastrone helped improve body finish and tone up-graded meat birds, the company said, and birds under treatment became quiet, did not dissipate energy in running and fighting and used feed more efficiently. Details are available by checking No. 7444 on the coupon and mailing to this publication.

## No. 7441—Weigh-Feeder Machine

A weigh-feeder machine designed for electronically controlled feeding of dry chemicals and other bulk materials in water, chemicals and other industrial processing operations is announced by Syntron Co. The unit provides continuous volume feeding at any rate between 3 and 300 lb. an hour, the company says. In operation,



the company stated, a weighed batch of material is loaded into the machine's 9 cu. ft. stainless steel hopper which is mounted on a beam-type hopper scale. Control mechanisms on the scale beam are set for the desired rate of feed. An electromagnetic vibrator on the hopper keeps the materials free-flowing and insures dependable supply to the feeder, the company says. The complete unit is contained in a dust-tight sheet metal cabinet. Check No. 7441 on the coupon and mail for details.

## No. 7448—Bin Design Booklet

A revised edition of the 16-page booklet "Fundamentals of Bin Design," has been announced by Sprout, Waldron & Co., Inc. The booklet explains the meaning of piped-in-feeds, and the features of the system. Also described is a suggested bin design for poultry and dairy feeds, giving details for construction and installation of the bins and the piping. Included are size and capacities for typical bins as well as information about converting existing bins. Copies of Bulletin 142-A can be obtained by checking No. 7448 on the coupon and mailing to this publication.

## No. 7447—Automatic Checkweigher

An automatic, high capacity checkweigher, designed to check weights of items from 50 to 200 lb., has been announced by Toledo Scale, division of Toledo Scale Corp. The unit will handle packages at speeds up to 40 items a minute, the company says, with an accuracy of approximately one part in 3,000. Model 9460 is equipped with a belt-type motorized conveyor on the weigh section. The unit continuously checkweighs bags, cartons, boxes, packages, blocks, cans or tubes without

Send me information on the items marked:

- ☐ No. 7438—Dryer Leasing Plans
- ☐ No. 7441—Weigh-Feeder Machine
- ☐ No. 7442—Plastic Egg Models
- ☐ No. 7444—Stilbestrol Product
- ☐ No. 7446—Suspended-Conveyor Weigher
- ☐ No. 7447—Automatic Checkweigher
- ☐ No. 7448—Bin Design Booklet
- ☐ No. 7450—Enzyme Feed Fortifier
- ☐ No. 7452—Equipment Leasing Study

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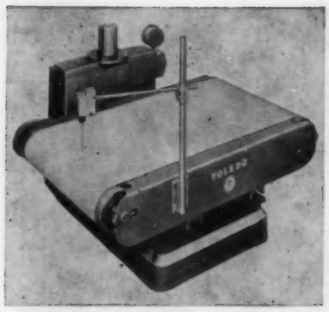
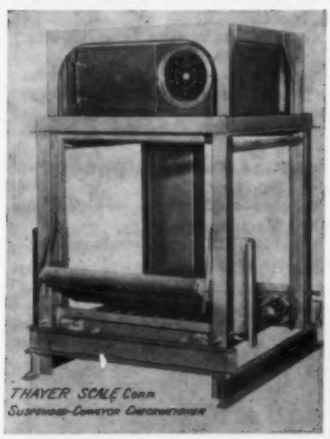


stopping the item on the scale, the company said, and the unit can be adjusted to change from one package weight to another. It can be furnished with remote zone indication stations and a pilot light unit can show the weight zone into which each item falls. Check No. 7447 and mail for details.

## No. 7446—Suspended-Conveyor Weigher

Thayer Scale Corp. announces a new model (CDAU) checkweigher with a conveyor suspended under the flexure plate scale. The unit, which is accurate to plus or minus 1/10th lb. of preset weight, was designed for installations where spillage conditions would interfere with the op-




eration of a scale placed under the conveyor, the company said. The model is also usable where low floor clearance is necessary. The scale is available in sizes from 18 in. to 36 in. with ranges up to 200 lb. and speeds up to 20 units a minute. It checkweighs, indicates and registers package weights automatically. For more information check No. 7446 on the coupon and mail.

## No. 7452—Equipment Leasing Study

"The Pros and Cons of Equipment Leasing for Smaller Manufacturers, Stores and Supermarkets," is the title of a study published by the Foundation for Management Research. The 16-page study discusses the cost of leasing compared with outright purchase and purchase through conditional sales contract. Complete cost charts are used to illustrate the material. Advantages and disadvantages of equipment leasing in specific business situations encountered by smaller enterprises are set out in detail. Copies are available by checking No. 7452 on the coupon and mailing to this publication.

## *Also Available*

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number on the coupon and forwarding it to Feedstuffs.

**No. 7401**—Loader for hopper cars, Productive Acres Manufacturing Co.

**No. 7402**—Bulletin on motor starters, Richardson Scale Co.

**No. 7403** — Elevator equipment, Munson Mill Machinery Co.

**No. 7404**—Grain storage building, Stran-Steel Corp.

**No. 7405**—Silo counter display, Flavor Corporation of America.

**No. 7406**—Laboratory service data, Wisconsin Alumni Research Foundation.

**No. 7407**—Grain conveyor, cleaner,

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MINERAL FEED
an economical source of high grade and well-balanced
TRACE MINERALS
Contains important mineral elements blended with COBALT, MANGANESE, ZINC, BORON, IRON, COPPER, STABILIZED IODINE and other trace minerals in carefully calculated proportions to supply necessary mineral nutrition.
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HAVE INCREASED APPROXIMATELY 40%"...

*says Dale Anderson manager of Peterson Co-Op Elevator Co. Peterson, Iowa*

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With 75 HP on the mill and 30 HP on the fan, full capacity operation of the Hammermill is normal routine. Handy, time-saving, quick-change screen controls are located on the main floor.

Minor feed additives are mixed and blended in a matter of minutes in the 2 ton Strong-Scott Triple Action Mixer.

**"In the 7 months we've had our Strong-Scott Hammermill and Triple Action Mixer, our sales have equalled what they were the entire 12 preceding months.**

"We grind all small grains," added Dale, "and have no trouble at all in grinding a two ton load in 10 minutes." Mixing, grinding, and conveying is a fast, automatically controlled operation at Peterson, Iowa.

"I sure like those specially hardened, sectionalized screens," said Dale. "Ours still don't show any wear whatsoever." Quick-change screens of various sizes in the Strong-Scott Hammermill offer ideal selection for custom grinding.

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Compact, dependable and accurate to one part in 3000, this new Toledo with continuous-running motorized conveyor on the weigh section fits readily into conveyor lines. Available with remote zone indication stations for continuous visual check, magnetic counters to accumulate operating data and many more important Toledo features.

Let us show you what the new 9460 Checkweigher can do for you. Write today for Bulletin 2968. TOLEDO SCALE, Division of Toledo Scale Corporation, Toledo 12, Ohio.

**TOLEDO Automatic Bulk Weighing ... net weight listing and totaling.**

Get accurate net weight listing and totaling of bulk materials going into truck or carload shipments. Weighing is automatic. You save time, control costs and reduce claims. The Toledo control console may be remotely located for operating convenience. All installations of the system to date have been certified by authorized agencies. Ask for Bulletin 2490.

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**EVENING WITH EGGS—Parke C. Brinkley (left), commissioner of agriculture for Virginia, received a gift basket of Virginia "quality eggs" from the Virginia Egg Council's Empress of Eggs, Miss Carole Buckner, Richmond, Va. The occasion was the council's "Evening With Eggs" banquet in Richmond. Looking on (right) is Rudy Standish, the "king of omelets" from New York City, who prepared individual omelets for the banquet's guests.**

Dunbar-Kapple, Inc.

**No. 7408**—Air delivery feeder, Ripco Air Systems.

**No. 7409** — High speed "Checkweigher," Thayer Scale Corp.

**No. 7410**—Feeder valve bulletin, Sprout, Waldron & Co., Inc.

**No. 7411**—Silage activator, Biochemical Corp.

**No. 7412**—Portable pasture waterers, Starline, Inc., and H. D. Hudson Manufacturing Co., distributors.

**No. 7413**—Multi-use feed wagon, Brower Manufacturing Co.

**No. 7414**—Poultry raising manual, Earl W. Garrison, Inc.

**No. 7415**—Feed mill, Shelby Manufacturing Co.

**No. 7416**—Automatic batching device, the Howe Scale Co.

**No. 7417**—Data sheet on shovel, Munson Mill Machinery Co.

**No. 7418**—Bovine mastitis information, Chas. Pfizer & Co., Inc.

**No. 7419**—"Vibratory" feeder, Eriez Manufacturing Co.

**No. 7420**—Screening feeder, Syntron Co.

**No. 7421**—Supplement hog feeder, Brower Manufacturing Co.

**No. 7422**—Plant planning article, Sprout, Waldron & Co., Inc.

**No. 7423**—Antibiotic for mastitis, E. R. Squibb & Sons, division of Olin Mathieson Chemical Corp.

**No. 7424**—Portable pellet mill, Dodgen Industries.

**No. 7425**—Steam boiler bulletin, Sellers Engineering Co.

**No. 7426**—Test sieve shaker data, Syntron Co.

**No. 7427**—Steel silo, Martin Steel Corp.

**No. 7428**—Egg packaging material, Independent Carton Co.

**No. 7429**—Gross weigher, Thayer Scale Corp.

**No. 7430**—Polyamino acids data, Mann Research Laboratories, Inc.

**No. 7431**—Vibration inducer, Martin Engineering Co.

**No. 7432**—Conveying system bulletin, Sprout, Waldron & Co., Inc.

**No. 7433**—Rumen literature, the Amburgo Co., Inc.

**No. 7434**—Animal by-product booklet, American Meat Institute Foundation.

**No. 7435**—Moisture determination balance, Burrows Equipment Co.

**No. 7436**—Over-under controller, Ralph C. Gardner & Co.

**No. 7437**—Chain drag conveyor, Sprout, Waldron & Co., Inc.

**No. 7438**—Dryer leasing plans, Daycom, Inc.

**No. 7439**—Automatic proportioning systems, Toledo Scale Corp.

**No. 7440**—Grain car literature, General American Transportation Corp.

**No. 7441**—Weigh-feeder machine, Syntron Co.

**No. 7442**—Plastic egg models, Tyrone Equipment Co.

**No. 7443**—Suspension waterer, Oakes Manufacturing Co.

**No. 7444**—Stilbestrol product, Eastern Laboratories, Inc.

**GIVE HIM ADVICE HE'LL APPRECIATE**

*Remind him to order Morton T-M Salt. See page 77.*



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## Livestock-Share Lease Agreements Studied

WASHINGTON—Help in overcoming the current capital shortages of individual farmers can result from livestock-share leasing agreements, in which tenants provide a smaller share and landlords a larger part of the resources needed to operate a farm enterprise.

This is pointed out in a recent study by U.S. Department of Agriculture and University of Wisconsin Experiment Station economists. A brief report on the study is included in a recent issue of the USDA Farm Paper Letter, published by the Office of Information of the USDA.

Under such agreements, the economists found, tenants would be able to lease larger farm units, and although they would receive a smaller percentage of the farm returns, their net income might be greater. And, by agreeing to accept a smaller share of resources from tenants, landlords with large farming units might profit by being able to attract tenants with superior managerial skill.

The study showed further that the large tenant capital needed nowadays for leasing an adequate farm under the traditional 50-50 share agreement is proving to be a serious handicap to beginning farmers.

The USDA-Wisconsin economists found that a tenant has to supply $4,000 to $6,000 worth of machinery and livestock to lease an adequate-sized farm under 50-50 sharing. Leasing a small unit, they say, does not provide enough returns to accumulate the investment capital needed for future farming operations.

## Beet Tops Make Good Feed for Dairy Cows

WASHINGTON—A Michigan State University report included in a recent issue of the USDA Farm Paper Letter states that more than $1.5 million worth of good dairy feed is not being used on Michigan farms where sugar beets are grown.

Tests by dairy scientists at the Michigan Experiment Station show that milk production stayed up when 35 lb. of beet-top silage replaced 6.4 lb. grain in an all-hay ration. The scientists say this indicates that the total digestible nutrients in the silage and grain were about equal for milk production.

When 50 lb. of silage were fed to the test cows, 12.4 lb. less of alfalfa hay were fed and most of the cows produced more milk. In another trial at Michigan State, milk production increased 7.7 lb. daily when 22 lb. of hay were replaced with 85 lb. of beet-top silage. The beet-top silage used in the Michigan tests was harvested with a forage harvester and ensiled with 200 lb. of beet pulp per ton of tops.

## Implants Suggested For Pastured Cattle

BLACKSBURG, VA.—Implanting feeder cattle with 12 mg. of stilbestrol when they are turned out to pasture this spring is likely to prove profitable for cattlemen, a Virginia Polytechnic Institute animal husbandryman says.

George W. Litton, head of the animal husbandry department, said that although results may vary, generally feeder cattle which have been treated will put on an extra 30 lb. of gain.

The 12 mg. dose is smaller than normally recommended by manufacturers, he said, but this will give satisfactory increased gains under Virginia conditions and will not result in any distracting side effects. Overdosing may mean a drop in quality, he said.

Mr. Litton also pointed out that response will vary from one farm to another, and indicated that some cattle feeders may show discrimination when it comes to buying the implanted cattle.

Most scientists think this discrimination is not justified, Mr. Litton said. They predict that in five years almost all stockers will be implanted as they go to pasture and will later be implanted by their new owners.

He warned, however, that animals that gain less than 1 lb. a day on winter feed will not usually respond well enough to stilbestrol to pay for the worry and work.


NOW..! LOAD or UNLOAD BULK FEED
with the PAMCO BACK SAVER

Attach this inexpensive AUGER UNIT to a grain box and you can handle any feed in bulk!

- Ideal for hoist trucks
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Borden's krepro and hopro

give top feed performance at reduced cost

With KREPRO and HOPRO you can build your own swine feed tonnage with a "life-cycle" program that meets the changing nutritional needs of growing swine—at unusually low cost.

*for creep feeds and pig starters...* krepro

For pigs up to 50 lbs., KREPRO supplies all fish, whey, and fermentation factors,* vitamins, antibiotics, and trace minerals — in amounts needed for fast starting and maximum feed efficiency. Yet KREPRO may actually save you money — it contains saccharine and thus can save up to $20. per ton on sweetener costs.

*for pigs over 50 lbs....* hopro

Economically formulated, HOPRO provides all needed micronutrients, growth and fermentation factors* — for more and better lean-meat-type hog production and reproduction. Available in three forms so that you can rotate antimicrobials for development of natural immunities and avoidance of drug resistance: HOPRO AB (contains penicillin and bacitracin); HOPRO 3N (contains 3-nitro-4-hydroxyphenylarsonic acid); and HOPRO R (no antimicrobial guarantee).

It has been four years since Borden first proposed Life-Cycle feeding with KREPRO and HOPRO. Are you upgrading your feeds with this proven feed program?

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*Laboratories and test farms at Elgin, Illinois*

*Both KREPRO and HOPRO have been made possible through Borden's development of FERMACTO-400—the new special blend of fermentation factors.

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IDEAS TO HELP YOUR CUSTOMERS

## Oiling of Eggs

What can the flock owner expect to gain by oiling his eggs? Dr. M. H. Swanson, professor of poultry husbandry, University of Minnesota, answers this question by citing an example: If eggs are held for 12 days at 75 to 80° F., the oiled eggs, he said, will still be grade A, while the unoiled eggs will drop to grade B. At higher temperatures the differences will be greater and at lower temperatures less.

Farm oiling of eggs can be of significant benefit, especially to producers whose refrigeration facilities are not adequate, according to Dr. N. V. Helbacka, poultry department, University of Maryland. Cost of the oil itself is slight, about 5¢ case (30 doz. eggs), if undiluted oil is used, and less if the emulsion is used. Although cost of the oil is a minor factor, labor and time involved in oiling should be considered.

The most up-to-date method of oiling eggs, according to Dr. Helbacka, is spraying, which eliminates egg dipping, considered unsanitary. Eggs are sprayed on filler-flats with a number of types of sprayers, the cheapest and simplest being the tin pump hand sprayer commonly used for spraying insecticides. A sprayer designed to discharge continuously makes it easy to apply the oil uniformly over a flat of eggs. Brass or stainless steel sprayers will give longer service, Dr. Helbacka said, and corrosion will not be a problem. A number of manufacturers are making aerosol bombs, which, according to Dr. Helbacka, are very convenient, but the spraying cost is higher.

Two types of oil are available—regular egg processing oil and water oil emulsion.

◆

## Marketing Hogs

The swine producer should look at more than the median base assigned to his lot of hogs when selling by yield and grade, says Dr. Ralph Durham, Iowa State College. He suggests looking at other figures the buyer must use in adjusting the actual amount paid the producer.

The swine producer will find it a good idea to estimate the spread of the live weights in the lot he is selling, according to Dr. Durham. Better yet, he should weigh his hogs individually on his own scale before going to the market so he'll know how wide the spread is.

Doing these things will enable the producer to compare offers of various buyers and to determine whether the base price quoted on grade and yield will actually pay more than the live-weight price.

Final step in this process, says Dr. Durham, is figuring how much it costs to deliver and sell hogs at markets contacted and subtracting these costs from the net return that can be expected at each market. This will, he said, tell the producer which market will pay the greatest total return for the entire lot.

◆

## New Dairy Plan

A new record plan, "Milk Record and Culling Guide," has helped increase a Minnesota dairyman's milk production by 12 to 15% per cow since last year, according to a report from the Institute of Agriculture, University of Minnesota.

The plan costs but 25¢ a copy, and the system requires only a half hour of the dairyman's time each month. Greatest help offered Leo Blashack

Mr. Gene Lane, Utility Operator, at the Central Soya Co., Inc., Chattanooga, Tenn. plant, operates 36 Merchen Scale Feeders that blend feed ingredients to 1% accuracy.

**MERCHEN SCALE FEEDERS**

*"give us accurate, continuous blending over a wide feed range"*

Central Soya Co., Inc., blends millions of bags of animal and poultry feed a year at their new Chattanooga plant. Up to 50 different formula feeds are produced to exacting standards. Central Soya chose W&T Merchen Feeders because they give 1% minute-to-minute accuracy over a wide feed range. As seen in the picture, the feeders are compact—with no bulky enclosures.

Merchen Scale Feeders, with feed rates from 3 to 3000 pounds per minute, require no adjustment for changes in material density. They are suited for most industrial continuous blending or automatic batching processes. For more information about Merchen Scale Feeders, write for Bulletin M-35.36.

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# Douglas

## HAS A SENTRY TO GUARD YOUR GRAIN!

In this box there's a very sensitive sentry. It's the automatic temperature and humidity control for the Douglas Grain Aeration System. Now you can give your grain storage problems the air . . . by giving your grain the right air.

Here's how it works: whenever the temperature and humidity are best for aerating grain, day or night, the power unit is automatically turned on. When temperature or humidity is not at the proper level, it is automatically turned off. This eliminates having to rely on guesswork or special instruments to tell you when to operate the system.

**This is only one of the features that make a Douglas aeration system your best buy. Look at these others:**

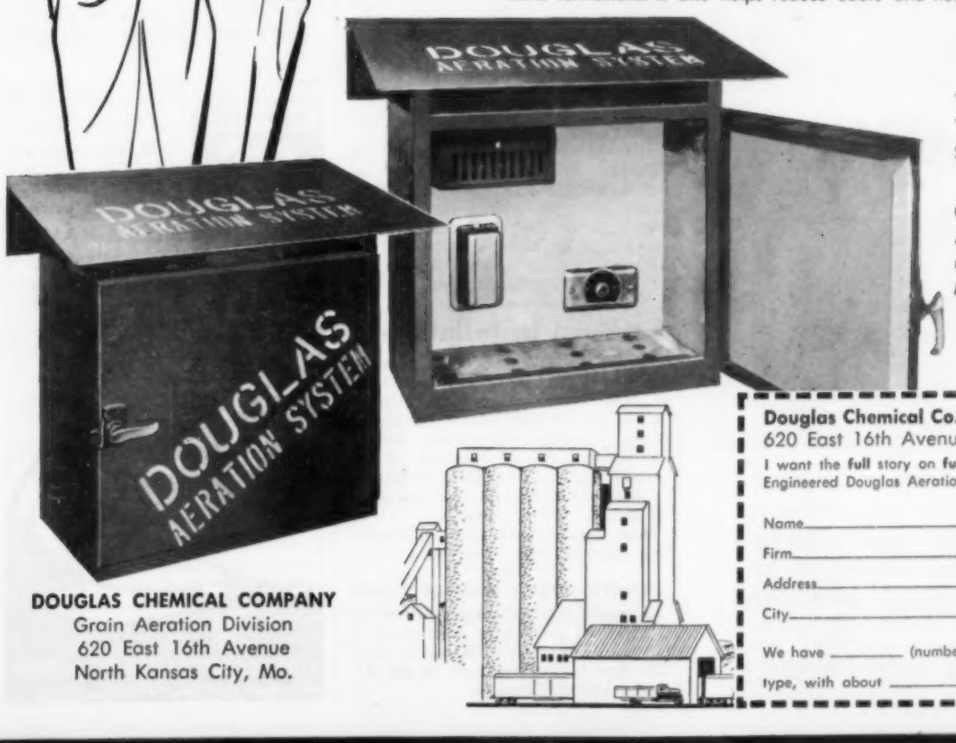
**Practical Price.** Every Douglas aeration system is custom-fitted to your exact specifications (for both flat and vertical storage) . . . and delivered at pre-fabricated prices! It costs you less than ordinary special built equipment because the entire system is made up of standardized components. Motors, fans and ducts of various sizes are interchangeable to fit specific storage facilities.

**Easy Installation.** Installation is so simple you can do it yourself. Your Douglas Aeration System is delivered ready to hook up. No need to alter existing storage facilities. And you don't have to wait until all bins are empty. Ducts are marked for installation as each bin becomes available.

**Guaranteed Performance.** Every piece of your Douglas aeration system has been pre-proved in actual storage use. This is why Douglas guarantees — in writing — every custom designed aeration system to perform exactly as specified.

**Look What A Douglas Aeration System Can Do for You . . .**

- By eliminating costly turning, you'll make profit formerly lost because of dockage and "turning shrinkage."
- With the extra space formerly used for turning you'll make additional profits from a full capacity operation.
- A Douglas Aeration System protects your grain against hot-spots, moisture migration and mold formations. It also helps reduce odors and helps fumigants gain maximum kill.

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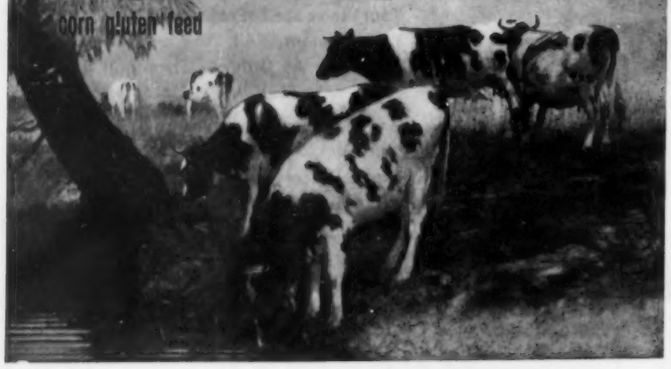
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by the plan is finding poor producers.

The culling guide is quite simple. Mr. Blashack weighs milk for each cow for one day of every month. Then he checks this weight against a chart in the book and gets an estimate of the cow's production for the month. At the end of the lactation period, he knows how each cow is doing.

◆

## Hay Crushing

Hay quality can be increased and haying time and effort cut by crushing the hay, according to C. L. Hill, Purdue University agricultural engineer.

Crushing, he says, speeds up field curing and results in less nutrient loss and less need for tedding and turning. Mr. Hill says crushing should be done before the hay becomes wilted — immediately after mowing.

◆

## Steer Weaning Weight

A six-year experiment conducted by the Colorado State University Experiment Station has found that weaning weight is "by far the most important single characteristic" to be considered in determining net income from steers.

Weaning weight is important to the rancher selling feeder calves not only because it means greater production from the cows, but also the relationship between weaning weight and grade indicates that the heavier weaning calves will grade higher, reports Howard Lindholm, animal husbandry department, Colorado State University.

Other traits which are most closely related to income are daily gain and cost of cow maintenance, Mr. Lindholm said.

◆

## Pig Anemia Prevention

Extensive research indicates that pigs need supplemental iron within two to three days after birth to prevent symptoms of anemia.

Dr. E. A. Rutledge of the Ohio Agricultural Experiment Station explains that the baby pig is born with a very limited supply of iron stored in its system. As the pig grows, this supply is rapidly exhausted in the manufacturing of new red blood cells so that early in life the pig shows symptoms of acute anemia.

In tests at the Ohio station, one treatment with injectable iron dextran was sufficient to prevent anemia. However, reduced iron in powdered form for oral use had to be given at two days and again at seven days of age for best results.

Anemia itself is not an infectious disease, but may lower the pig's resistance to infectious diseases. Therefore, anemia may indirectly lead to unthriftiness and even death of young pigs.

Anemia is often referred to as "thumps" because of baby pig's labored, spasmodic breathing. It generally develops within two to four weeks after birth and may be accompanied by other symptoms, such as loss of appetite, dry and wrinkled skin and abnormally slow growth.

## Aeration Installations

BOONE, IOWA — The growing number of feed and grain firms with grain aeration equipment had an addition of 20 more recently. Rolfes Grain Aeration Companies, Boone, has announced installations by 20 firms in eight states. The breakdown, by states, is as follows: Indiana, eight; Nebraska, three; Missouri, two; Texas, two; Kansas, two; Oklahoma, one; Illinois, one; Iowa, one.

**CONSTRUCTION NEARLY DONE**

ATLANTIC, IOWA—Construction is reported to be near completion at the Challenge Feed Co. plant here. The firm is the successor to the Atlantic Mill & Elevator.

Ulcers often come from mountain-climbing over molehills.

◆ ◆ ◆

A wedding ring may not be as tight as a tourniquet but it certainly stops the circulation.

◆ ◆ ◆

Women come in four general specifications: Thin, medium, plump, and "Get a load of her!"

◆ ◆ ◆

Take your choice: Be an old maid and look for a husband every day or marry and look for him every night.

◆ ◆ ◆

One supervisor was telling another, "When I walk through the typist section I feel like a piece of uranium approaching a whole battery of geiger counters."

"What do you mean?" the other man asked. "The closer I get the faster they click!"

◆ ◆ ◆

"Is this Peabody, Finchley, Longworth, and Fitzgerald?"

"Yes, this is Peabody, Finchley, Longworth, and Fitzgerald."

"I want to speak to Mr. Smith."

◆ ◆ ◆

The big city reporter stopped at a little rural newspaper office. During the conversation he asked the elderly editor, "How do you manage to keep your circulation the same all year 'round in a town where the people know what everyone else is doing?"

The country editor grinned a little and replied, "They read the paper each week to see who's been caught at it."

◆ ◆ ◆

"He's not as big a fool as he used to be."

"Getting wiser?"

"No, thinner."

◆ ◆ ◆

A davenport held the twain.
Fair damsel and her ardent swain;
Heandshe.
But then, a step upon the stair!
And father finds them sitting there:
He . . . and . . . she.

BEFORE

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Henry W. Hasse, Jr.

**JOINS BURRUS**—Henry W. Hasse, Jr., has joined Burrus Feed Mills, Ft. Worth, as assistant sales manager, according to Wesley E. Ballmann and Charles W. Harris, co-managers of the company. Following graduation from Texas A&M College on a four-year scholarship and four years in the armed forces, Mr. Hasse was employed by a large dairy company and later by several other feed milling companies.

## *Sees Need to Check Contract Provisions*

RALEIGH, N. C.—C. F. Parrish, poultry specialist, North Carolina State College, declared recently that some producers are not taking time to read the "fine print" of their contracts to produce broiler hatching eggs. As a result, he said, they are "laboring under contracts which offer them little, if any, hope of ever being able to pay the feed bill, let alone receiving any compensation for their labor and expenses."

Mr. Parrish said the advent of broiler contract farming in North Carolina has "created the desire to extend contracts to other fields of poultry production, particularly in broiler hatching eggs." Few farmers, in his opinion, are able to produce broiler strain hatching eggs over a consistent period of time for less than 55¢ doz. Where feed cost is $5 cwt. or more, the cost of producing a dozen hatching eggs is often in excess of 60¢ doz., he said.

"Producers of hatching eggs could well afford to consult their county agent on the average cost of producing hatching eggs," he said.

## Announces Merger

NEW YORK—McKesson & Robbins, Inc., New York, has announced that it has entered into an agreement to acquire all outstanding stock of Barada & Page, Inc., Kansas City, in exchange for McKesson & Robbins stock. The announcement said the services of Barada & Page personnel and the company's present distribution facilities will be continued as part of the McKesson & Robbins organization. Barada & Page is a distributor of heavy industrial chemicals in the south central and southwest regions of the U.S.

## Safflower Development

SAN FRANCISCO—Increasing interest is developing among California dairymen for safflower meal with 5% hydrolized coconut oil added, the Stockton Grain Exchange has reported. It has a "nice appearance," pleasant odor, and the meal—in bulk, bags, pellets or pea-sized crumbles—appeals to feeders, according to Edwin A. Kauppila of the exchange. Some dairy feed mixers are using this combination to extend or replace the coconut meal in their rations.

**VY LACTOS NAMES CONTEST WINNERS**—Master Feed & Seed Co., Indianapolis, was named winner of the VyLactos Laboratories 29th anniversary sales contest recently on the basis of tonnage sold. Bill Rogerson, president of the Des Moines, Iowa, firm is shown (right) in the first picture presenting the winner's plaque to Mike Hummingsen, manager of Master Feed & Seed. In the second photo, Bryce Snyder (center), a salesman for Master Feed & Seed, receives a diamond ring from Dr. Gary Severson (right), director of sales and nutrition for VyLactos. Watching is Wayne Lantis, district manager for VyLactos. Mr. Snyder was national leader among distributor salesmen. The presentations were made at a banquet for Master Feed & Seed employees in Indianapolis.


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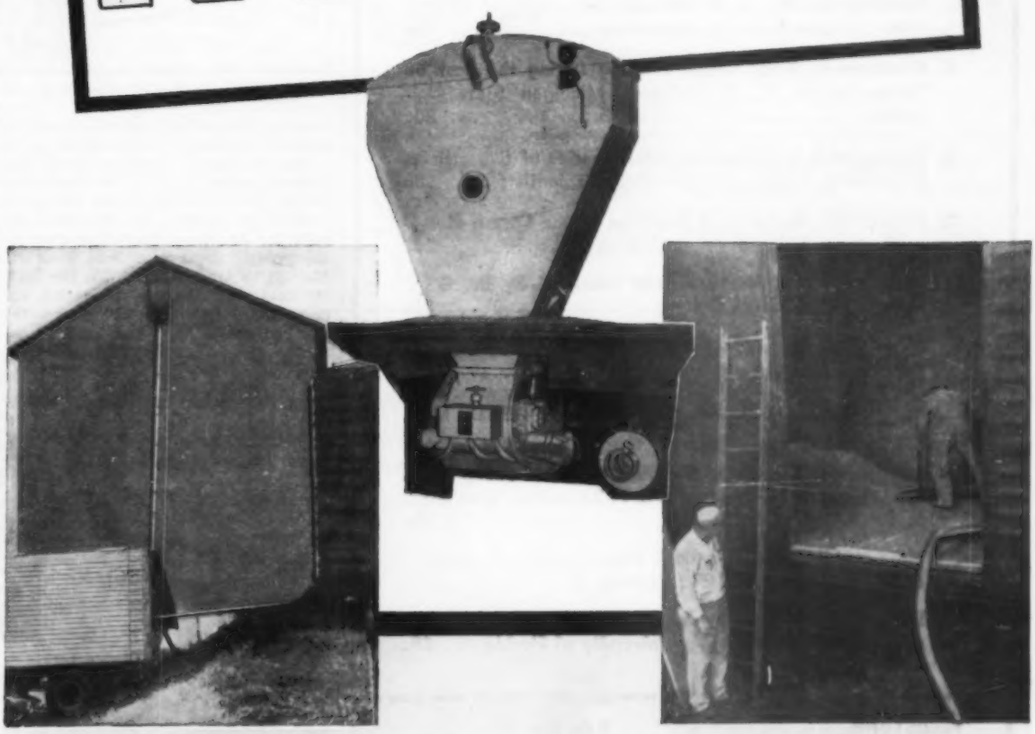

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# N.C. Association Elects Officers at Annual Convention

RALEIGH, N.C. — During the recent annual convention of the North Carolina Grain & Feed Dealers Assn. here the board of directors elected T. C. Flood, Eastern Carolina Feed & Seed, Elizabeth City, president, succeeding Loy W. Ledbetter, Jr., Ralston Purina Co., Wilson. Other officers are Leroy Powers, Powers & Winslow, Moyock, vice president, and O. W. Faison, North Carolina Department of Agriculture, secretary-treasurer.

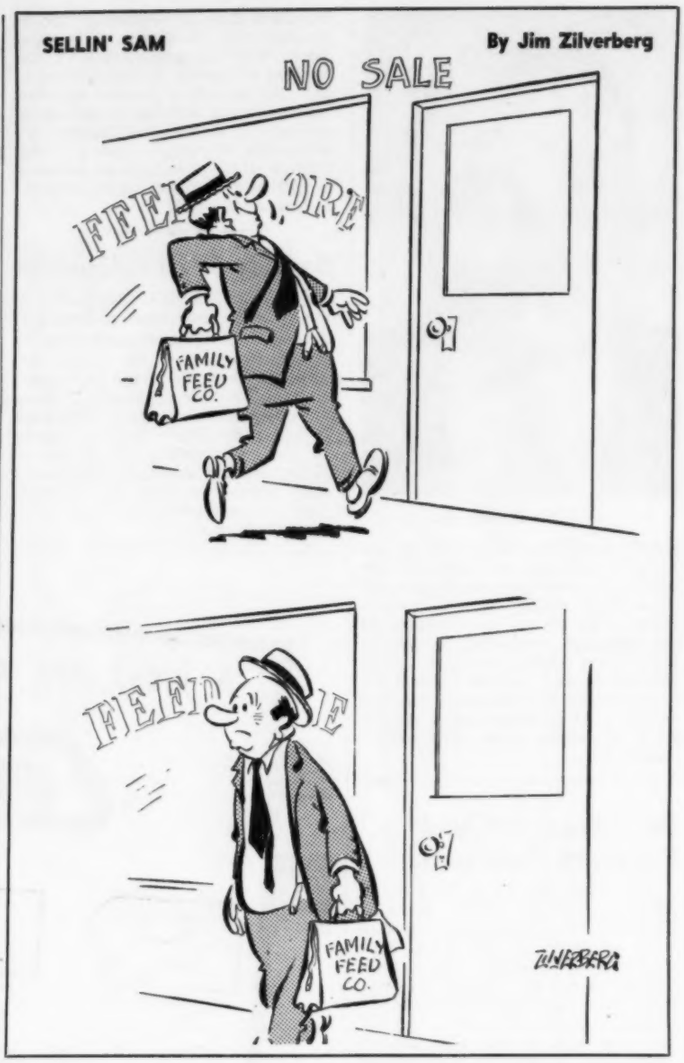
Members of the board besides the officers are Don Cameron, Ralston Purina Co., Charlotte; H. I. Davis, Davis Mills, Seven Springs; George King, King Bros., Ayden, and Don Biggerstaff, Gorham Milling Co., Rocky Mount.

During the business session the association approved acceptance of firms who have more than one elevator or processing plant for an additional $5 membership fee. On this basis, the association will send all correspondence and notices of other activities to the additional plants.

The association voted to accept the charter drawn up by C. W. Sheffield, North Carolina Department of Agriculture, to file with the secretary of state for incorporating and to change the group's fiscal year from June 1-May 31 to April 1-March 31. The latter vote will give the association an opportunity to climax its year with the convention in March and allow sufficient time between its convention and summer meeting for preparation.

Mr. Faison, secretary-treasurer, said the organization has been giving consideration to exhibiting feed processing equipment at the convention, "since we are expanding rapidly in the feed industry in North Carolina to meet the growing needs with the expansion in poultry, swine and livestock."

Convention speakers and their subjects were: Sen. John Jordan, "Current Legislation"; Lyman Reed, Greenville, Miss., "Do's and Don'ts in Planning Expansion and New Con-




## FEEDSTUFFS reprints

The following reprints of articles which have appeared in Feedstuffs may be obtained on order from Feedstuffs' Reader Service Department:

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17. **How to Make a Grain Bank Pay**—by John E. Bonnett, Bonnett Feed & Grain Co., Bushnell, Ill. ..... **20c**
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## GENERAL INCREASE IN FATS IN FEEDS

**WASHINGTON — Utilization of tallow and greases in feeds last year was more than three times what it was four years earlier, but slightly down from 1957, according to the Agricultural Marketing Service's fats and oils situation report.**

**USDA said 353 million pounds of tallow and greases were used in feed, compared to 111 million pounds in 1954. The largest figure, 387 million pounds, was recorded in 1957. Use during the intermediate years was 181 million pounds for 1955 and 296 million pounds for 1956.**

**According to USDA, the trade feels total use of tallow and grease in industry is larger than figures based on census reports, because of some use in feeds remaining unreported.**

struction of Grain Facilities"; Everett Nichols, extension grain marketing specialist, "North Carolina's Future in the Grain Market"; C. E. Alvis, sales coordinator, Rolfes Grain Aeration Cos., "Aeration in Grain Marketing Facilities"; Mr. Faison, "Inefficient Facilities and Management Cut Profits"; George Wood, F. P. Wood & Son, "Grain Storage Operations Under the North Carolina and U.S. Warehouse Systems"; Al Oliver, executive vice president, Grain & Feed Dealers National Assn., "A Member Looks at His Trade Association," and B. W. Brown, director, North Carolina Income Tax Division, and James Little, Internal Revenue Service, "Tax Laws as They Relate to Depreciation on Grain Handling and Storage Facilities."

## *Goose Production Studied in Canada*

OTTAWA—The future of geese as a meat source in Canada is currently under study at the Central Experimental Farm, Ottawa.

It has been reported that results of a breeding program show that rapid progress can be made with geese, but there is still the question of whether goose meat can be produced as cheaply as other types of poultry. Geese are seasonal egg layers, producing only for four or five months each spring. Their low egg production has meant high gosling costs.

The breeding program with geese at Ottawa has resulted in increased egg production. Researchers at the center said the average number of eggs in the first production year has been raised from 14 to 34 over a period of seven years. It was noted that while this is still lower production than that of large type turkeys, the goose's production increases during the second laying year and again in the third. The researchers stated also that the effort made in increasing goose egg production is very small compared with that devoted to turkeys or chickens.

Advantages attributed to the goose by the investigators include: (1) "Most rapid growing of the domestic species of poultry," (2) good forager —pasture can be used to reduce the amount and quality of feed, (3) "more resistant to disease than chickens and turkeys, and mortality in growing and breeding flocks is generally lower" and (4) extremely hardy—inexpensive housing can be used in the winter and no housing is needed in the summer.

## Moroni Names Officers

MORONI, UTAH—New officers for the Moroni (Utah) Feed Co. were elected at the recent meeting of the firm. J. Howard Blackham was named president; Ray Seely, Mt. Pleasant, vice president, and Elden Westenskow, secretary and director. Evan M. Johnson, Manti, and Howard O. Willardsen, Ephraim, were named to the board. Manager is Ralph Blackham.

### SAMUEL HUTCHINSON DIES

MEMPHIS — Samuel Hutchinson, Jr., owner of his own cottonseed products business in the Memphis Cotton Exchange Building, died recently at the age of 66 in the Kennedy Veterans Hospital here. He had been seriously ill for 10 days. Before going into business for himself, he was associated for many years with Zimmerman-Alderson-Carr. He was a member of the Memphis Board of Trade.


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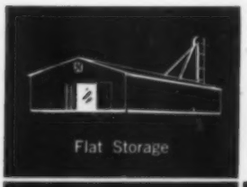
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# Convention Calendar

## New Listings

**For the convenience of readers who scan the Convention Calendar regularly for new listings, those added to the column in the current week appear ahead of the ones which have been entered previously. The following week they will be moved to their proper slot where they will remain until the event is held.**

• • •

April 21-22 — Grain Dealers Management Conference; University of Illinois, Urbana; conference supervisor; 116C Illini Hall, Champaign, Ill.

May 25—Des Moines Feed & Grain Club Field Day; Des Moines Golf and Country Club; ticket chairman, Curtis Twedt, Spencer, Kellogg & Sons, Inc., 119 S.E. 3rd, Des Moines, Iowa.

May 27-28—North Carolina Poultry Field Day; North Carolina State College, Raleigh; chm., Dr. E. W. Glazener, Poultry Department.

Aug. 11-12 — Wisconsin Nutrition School; Memorial Union, University of Wisconsin, Madison; chm., Dr. Robert H. Grummer, Dept. of Animal Husbandry, University of Wisconsin.

Aug. 17-18—Kentucky Feed Conference, sponsored by Kentucky Feed & Grain Assn.; Brown Suburban Hotel, Louisville; sec., Jack Weber, P.O. Box 425, Lexington, Ky.

Aug. 23-25—Poultry Industries of Louisiana, Inc.; Captain Shreve and Washington Youree Hotels, Shreveport; sec., Clyde Ingram, Louisiana State University, Baton Rouge, La.

Sept. 9-10 — Maryland Poultry Service Conference; University of Maryland, College Park; chm., Wade H. Rice, University of Maryland, College Park, Md.

1960

Jan. 25-27 — Southeastern Poultry & Egg Assn.; Municipal Auditorium, Atlanta, Ga.; sec., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.

Feb. 12-14—Fact Finding Conference, sponsored by the Institute of American Poultry Industries; Municipal Auditorium, Kansas City, Mo.; pres., Harold M. Williams, 59 East Madison, Chicago, Ill.

Feb. 23-24—Virginia Feed and Nutrition Conference; Hotel Roanoke, Roanoke; sec., J. Paul Williams, 615 E. Franklin St., Richmond, Va.

March 23—Distillers Feed Conference; Sheraton Gibson Hotel, Cincinnati; sponsored by Distillers Feed Research Council; exec. director, Dr. Lawrence E. Carpenter, 1232 Enquirer Bldg., Cincinnati, Ohio.

• • •

April 12-14—Animal Health Institute, Inc.; Shoreham Hotel, Washington, D.C.; sec., D. L. Bruner, 512 Shops Bldg., Des Moines, Iowa.

April 12-15—National Fisheries Institute; Hotel Commodore, New York City; asst. gen. mgr., Mal Xavier, 1614 20th St. N.W., Washington 9, D.C.

April 12-17—Grain Elevator & Processing Superintendents; Multnomah Hotel, Portland, Ore.; sec., Dean M. Clark, 1120 Board of Trade Bldg., Chicago 4, Ill.

April 13-14 — Nebraska Grain & Feed Dealers Assn.; Paxton Hotel, Omaha; sec., Howard W. Elm, Trust Building, Lincoln, Neb.

April 14-15—Poultry and Egg National Board meeting; Edgewater Beach Hotel, Chicago; gen. mgr., Lloyd H. Geil, 8 S. Michigan Ave., Chicago 3, Ill.

April 16—New England Dairy Feed Conference; Hotel Lenox, Boston; chm., Stanley N. Gaunt, University of Massachusetts, Amherst, Mass.

April 17—Nebraska Feeders Day, University of Nebraska, Lincoln, Neb.

April 17-18—Oklahoma Grain & Feed Dealers Assn., Youngblood Hotel, Enid; sec., E. R. Humphrey, 605 First National Bank Bldg., Enid, Okla.

April 23-25—California Hay, Grain & Feed Dealers Assn.; Fairmont Hotel, San Francisco; sec., John F. Gilmore, Blue Anchor Bldg., Sacramento, Cal.

April 24—Washington Beef Cattle Day; Washington State College, Pullman, Wash.

April 24-25—Joint Convention, Texas dealer and manufacturer groups; Hotel Texas, Ft. Worth—Texas Grain & Feed Dealers Assn.; sec., Ben M. Ferguson, 614 Meacham Bldg., Ft. Worth; Texas Feed Manufacturers Assn., sec., Ben. E. Schmitt, 3421 Park Ridge Blvd., Ft. Worth.

April 24—Indiana Cattle Feeders

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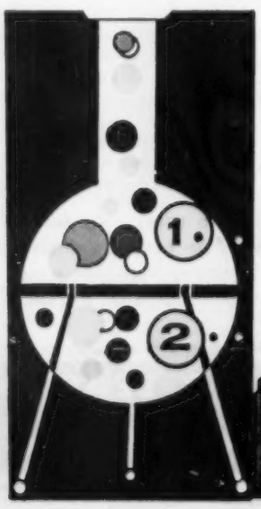


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Day; Purdue University, Lafayette, Ind.; chm., Dr. W. M. Beeson, Department of Animal Science, Purdue University.

April 27-29—American Association of Feed Microscopists; Hotel Lincoln Douglas, Quincy, Ill.; sec., G. M. Barnhart, Missouri Dept. of Agriculture, Jefferson City, Mo.

April 30-May 2—Kansas Grain & Feed Dealers Assn.; Broadview Hotel, Wichita, Kansas; sec., O. E. Case, 609 Wiley Bldg., Hutchinson, Kansas.

May 8-10—Grain Processing Machinery Manufacturers Assn.; Chicago; sec., Raymond J. Walter, 511 Fifth Ave., New York 17, N.Y.

May 10-12 — National Cottonseed Products Assn.; Mark Hopkins and Fairmont Hotels, San Francisco; sec., John F. Moloney, 43 N. Cleveland St., Memphis, Tenn.

May 11-13—American Feed Manufacturers Assn. Convention and National Feed Industry Show; Conrad Hilton Hotel, Chicago; sec., W. T. Diamond, 53 W. Jackson Blvd., Chicago 4, Ill.

May 15-16—Missouri Grain, Feed & Seed Assn.; Hotel Governor, Jefferson City, Mo.; sec., D. A. Meinershagen, Higginsville, Mo.

June 1-2—Central Retail Feed Assn.; Hotel Schroeder, Milwaukee; sec., Eldon H. Roesler, 1712 W. St. Paul Ave., Milwaukee, Wis.

June 7-9—Indiana Grain & Feed Dealers Association; Sheraton Hotel, French Lick, Ind.; sec., Fred Sale, 600 Board of Trade Bldg., Indianapolis, Ind.

June 7-9 — Eastern Federation of Feed Merchants, Pocano Manor Inn, Pocano Manor, Pa.; sec., Austin W. Carpenter, Sherburne, N.Y.

June 8-10—Alabama Poultry Industry Assn.; Municipal Auditorium, Birmingham; exec. sec., W. L. Walsh, P.O. Box 567, Montgomery, Ala.

June 9—Northeastern Poultry Producers Council Egg Quality and Grading School; University of Massachusetts, Amherst; mgr., Dr. Alfred Van Wagenen, 10 Rutgers Place, Trenton 8, N.J.

June 9-10—Association of Southern Feed and Fertilizer Control Officials; Velda Rose Motel, Hot Springs, Ark.; sec., Maurice B. Rowe, Virginia Dept. of Agriculture, 1123 State Office Bldg., Richmond, Va.

June 25-27—Delmarva Chicken Festival, Dover, Del.; Dave Green, 1102 S. State St., Dover, Del.

June 25-27—Canadian Feed Manufacturers Assn.; Bigwin Inn, Lake of Bays, Ontario; N. D. Hogg, Box 66, Station Q, Toronto, Ont.

June 25-27 — Delmarva Chicken Festival; Dover, Delaware; sec., J. Frank Gordy, Delmarva Poultry Industry, Inc., R.F.D. No. 2, Box 47, Georgetown, Del.

July 10-14—Georgia Feed Assn.; General Oglethorpe Hotel, Savannah, Ga.; sec., Will L. Kinard, 3240 Peachtree Rd. Bldg., Atlanta 5, Ga.

July 21-23—American Poultry Congress and Exposition; Kiel Auditorium, St. Louis, Mo.; exec. sec., Don M. Turnbull, American Poultry and Hatchery Federation, 521 E. 63rd St., Kansas City 10, Mo.

Aug. 3-8—Feed Microscopy Short Course; Texas Agricultural Experiment Station, College Station; chm., E. E. Brown, Asst. State Chemist.

Aug. 4-7 — Poultry Science Assn. (meeting for members and executive committee invited guests only), Iowa State College, Ames; chm., Dr. Robert E. Phillips, poultry department, Iowa State College.

August 7-8—North Carolina Feed Manufacturers Assn.; Ocean Forest Hotel, Myrtle Beach, S.C.; sec.-treas., A. M. Upshaw, Jr., North Carolina Feed Manufacturers Assn., Box 44, Mocksville, N.C.

Aug. 23-25 — The National Hay Assn.; Sir Francis Drake Hotel, San Francisco; sec., Fred K. Sale, 600 Board of Trade Bldg., Indianapolis, Ind.

Sept. 9-10 — Pet Food Institute, Drake Hotel, Chicago; sec., Clyde Kassens, 3325 Michigan Ave., Chicago, Ill.

Sept. 13-14—Grain and Feed Dealers National Assn. (work meeting for directors, committees and members),

## CALENDAR FOR 1959-60

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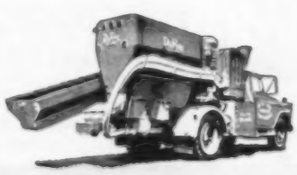

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Dependability, fast mixing action, and low cost operation make Brower the WORLD'S LARGEST SELLING MIXER! Brower action WHIRLS the ingredients instead of just stirring or tumbling them . . . produces the most thorough mix you can get. Every sack has the same even mixture.

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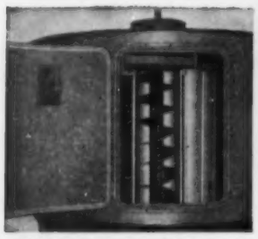

Interior readily accessible through large hinged service door and hinged conveyor sleeve.

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Glass observation window at eye level provides easy inspection of mixed feed at any time.

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**Minneapolis; exec. vice pres., Alvin E. Oliver, 400 Folger Bldg., Washington 5, D.C.**

**Sept. 16-18—National Feed Ingredients Assn.; Pick-Congress Hotel, Chicago, Ill.; sec., Peter W. Janse, 212 Equitable Bldg., Des Moines, Iowa.**

**Sept. 17-18 — Arkansas Formula Feed Conference; University of Arkansas, Fayetteville; chm., Dr. E. L. Stephenson, Department of Animal Industry.**

**Sept. 18—College - Feed Industry Conference; Iowa State College, Ames; chm., Prof. Emmit Haynes, Animal Husbandry Dept.**

**Sept. 23-25 — Feed Production School; Continental Hotel, Kansas City; Lloyd Larson, 20 W. 9th St. Bldg., Kansas City, Mo.**

**Oct. 6-8 — Northeastern Poultry Producers Exposition; Farm Show Building, Harrisburg, Pa.; sec., Dr. Alfred Van Wagenen, 10 Rutgers Place, Trenton 8, N.J.**

**Oct. 7-9—Texas Nutrition Conference; Texas A&M College, College Station; chm., Dr. J. R. Couch, Department of Poultry Science.**

**Oct. 14 — Animal Nutrition Research Council; Shoreham Hotel, Washington, D.C.; sec., Irwin Olcott, Dawe's Laboratories, Inc., 4800 S. Richmond St., Chicago 32, Ill.**

**Oct. 14-15—Association of American Feed Control Officials; Shoreham Hotel, Washington, D.C.; sec., Bruce Poundstone, Agricultural Experiment Station Bldg., University of Kentucky, Lexington, Ky.**

**Oct. 20-21—Virginia State Poultry Federation; Hotel John Marshall, Richmond, Va.; sec., J. Paul Williams, 615 E. Franklin St., Richmond 19, Va.**

**Oct. 22-23 — Annual Stockholders Meeting, Cooperative G.L.F. Exchange, Inc., Onondago County War Memorial Building, Syracuse, N.Y.**

**Oct. 30—Illinois Sheep Producers Day; University of Illinois, Urbana; chm., Dr. U. S. Garrigus, Department of Animal Science.**

**Nov. 4-7 — National Renderers Assn., Hollywood Beach Hotel, Hollywood Beach, Fla.; sec., Miss Jamie Fox, 30 N. La Salle St., Chicago 2, Illinois.**

**Nov. 12-13—Cornell Nutrition Conference; Hotel Statler, Buffalo, N.Y.; chm., Dr. F. W. Hill, Poultry Husbandry Dept., Cornell University, Ithaca, N.Y.**

## Reports Market News

BATON ROUGE, LA.—A new marketing news service covering the Louisiana grain and feed trade has been inaugurated, according to Sidney J. McCrory, agriculture commissioner. The grain reports, issued every Friday, will cover Louisiana cash grain prices for corn, milo, oats, soybeans and wheat, plus the amount of grain inspected for export at Gulf ports. The feed report, issued every Wednesday, will include wholesale carlot selling prices of alfalfa meal, brewers grains, cottonseed meal, corn gluten feed, meat and bone meal, soybean meal, wheat bran, wheat shorts, rice bran and blackstrap molasses.

## *Texas Dehydrators Elect New Officers*

WACO, TEXAS—Leon Thompson, Waco Alfalfa Dehydrating Co., was elected president of the Texas Dehydrators Assn. during a recent meeting of the group. He succeeds Charles E. Hurst, Evergreen Farms, Inc., Raymondville, who automatically becomes vice president.

Frank Thompson, Grayson Alfalfa Dehydrating Mills, Sherman, was reelected secretary-treasurer. New directors are A. J. Nigliazzo, Brazos Valley Dehydrating Co., Hearne, and C. W. Scheurer, Grayson Alfalfa Dehydrating Mills.

Attending the meeting from outside the state were Ralph Beermann, Beermann Bros. Dehy, Dakota City, Neb., president, American Dehydrators Assn., and Joseph Chrisman, ADA executive vice president, Kansas City.

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**BIN VIBRATORS**

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**Only economically priced electro-permanent magnetic unit (bin) vibrators fully acceptable by Mill Mutual Fire Prevention Bureau.**

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**Newest, most efficient** answer to those hard-to-move feedstuffs which clog and stick in bins. Designed to provide superior operating efficiency, these HI-VI Vibrators have exclusive pinpointed vibration impact which gets right to the trouble spot—starts **and keeps** materials flowing freely.

**NO RECTIFIER NEEDED • COMPLETELY ENCLOSED HOUSING • GREATER VIBRATION IMPACT THAN COMPARABLE SIZE UNITS • RUGGED AND DURABLE • LOW FIRST COST • LOW OPERATING AND MAINTENANCE COSTS.**

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**118-RA Magnet Dr. Erie, Pa.**

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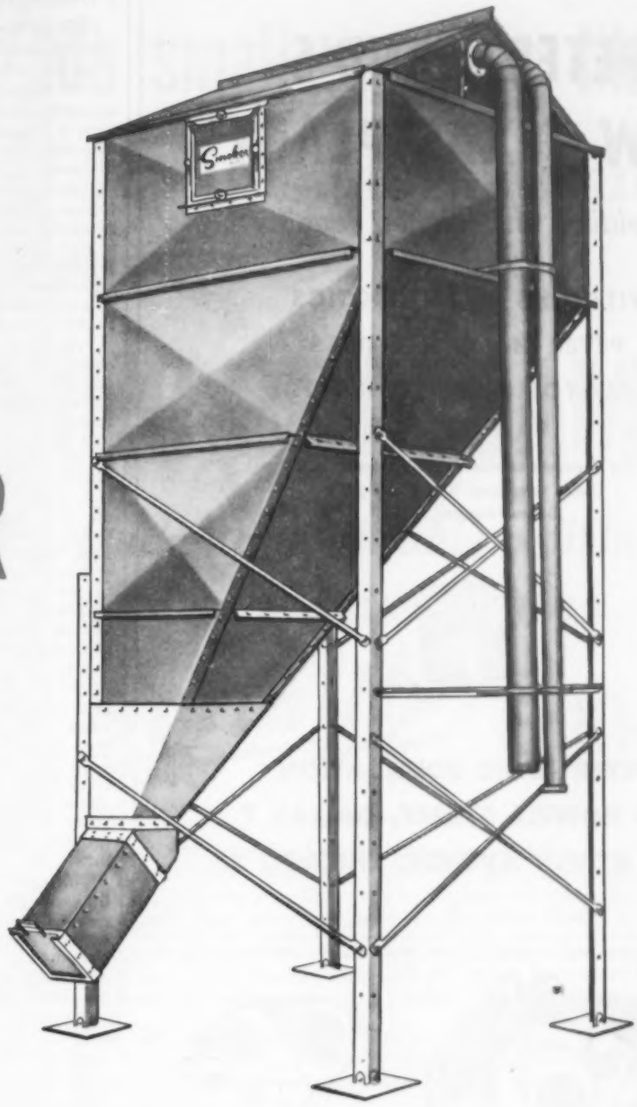
*America's Fastest-Growing Farmaceutical House*

# BUILD BIGGER FEED VOLUME!



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HERE'S how to help your customers save feed, money and storage space. Easy to erect and assemble, all-metal Smoker Feed Bins are weathertight and verminproof, for indoor or outdoor use. Capacity is 4 to 10 tons of heavy chick mash. Built of rust-resistant, heavy-gauge galvanized steel. Bolted construction throughout prevents sagging, buckling or swaying. Easy to fill by air or auger. Sixty-degree slope of sides assures free-flowing discharge. Square shape fits all types of installations. Convenient side draw-off can be placed anywhere. Adaptable for both dairy and poultry feed.

Let us tell you how you can make money with Smoker Bulk Feed Bins. Mail coupon today for details.

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CFS Concentrate #3 consists of dried corn fermentation solubles on selected by-products of the wet corn milling industry. University tests prove it a rich source of several unidentified growth factors. Broilers, turkeys and swine gain fast when you add free-flowing CFS #3 to your formulae. Yet it costs less than most other UGF fortifiers. Compare CFS #3 now. It's always available, always uniform in quality. And it handles nicely in bulk shipment. Write for data today on this economical, proven supplement.

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**CLINTON, IOWA**

## *Announces Program Offering Long-Term Financing to Mills*

CHICAGO — Commercial Discount Corp., Chicago, will embark on a program of offering long-term (five-year) capital financing to growth corporations in the milling industry, with a minimum of $100,000 and a maximum of $1 million to any one company.

Sidney Feuchtwanger, president of Commercial Discount Corp., a private financing company, indicated, "after a year of experimentation, we have decided that long-term five-year capital loans to growth companies in manufacturing and distributing are feasible and sound.

"The results of our extensive study show that the majority of growth companies can usually find short-term accommodations, but long-term financing is another matter. Our findings bear out what earlier surveys by the Federal Reserve System, the Reconstruction Finance Corp., the U.S. Department of Commerce, and the National Industrial Conference Board showed," Mr. Feuchtwanger said. "About one-half of bank refusals of loans to growth companies are due to the demand for long-term loans. Smaller firms with good credit can usually obtain short-term loans, but find long-term credit impossible to arrange."

Mr. Feuchtwanger added that the new program will differ from bank loans, since the term is far longer than any short-term bank commitment would allow. He said the new setup would differ from underwriters' public stock issues by involving no share of ownership of profits in the growth company, or voice in management.

This new type of long-term financing will be based on demonstrated earnings power rather than the value of fixed assets of the borrower, although the usual type of business loan collateral will be involved, Mr. Feuchtwanger said.

"In order to qualify for the program," Mr. Feuchtwanger said, "a company must have competent management, a history of company profits and ability to repay the loan over the five-year period, expansion possibilities and proof that the new funds will be put to constructive use.

"Nobody can long continue to accumulate inventories, pay labor, overhead and fixed charges, provide for continued production and growth, without adequate long-term capital with which to turn around and expand."

## Joins Research Staff Of Laboratories Firm

MADISON, WIS.—Roger Winans has joined the staff of the American Scientific Laboratories research department here as a microbiologist in the virology section. He is assisting in the study of viruses in tissue culture, it was announced.

A graduate of South Dakota State College, Brookings, Mr. Winans received his B.S. degree in bacteriology in 1956 and his M.S. degree in 1958. He has had supporting academic work in biochemistry and poultry husbandry, and has had practical experience in research and production of biologics, the announcement said.

## Detector Use Grows

DES MOINES—Hot Spot Detector, Inc., Des Moines, has announced that new electronic Hot Spot units for measuring and controlling temperatures in stored grain were installed recently in many states, including Arkansas, California, Colorado, Illinis, Indiana, Kansas, Michigan, Minnesota, Missouri, Nebraska, New Jersey, New York, Oklahoma, Oregon, Tennessee, Texas and Wyoming.

**Dr. Dale E. Butz**

**ECONOMIST FOR FIRM—Dr. Dale E. Butz, now associate professor of agricultural economics, Michigan State University, July 1 will join the staff of Illinois Farm Supply Co. as agricultural economist, according to an announcement by C. H. Becker, general manager of the company, Chicago. In this new position, Dr. Butz will become a member of the firm's executive management committee. At the present time Dr. Butz is on sabbatical leave from Michigan State, engaged in a research project for the Harvard Graduate School of Business Administration. Last summer Dr. Butz spent six weeks at Illinois Farm Supply Co. studying the company's operations under a college-business exchange program sponsored by the Foundation for Economic Education.**

**GIVE HIM ADVICE HE'LL APPRECIATE**

*Remind him to order Morton T-M Salt. See page* 77.

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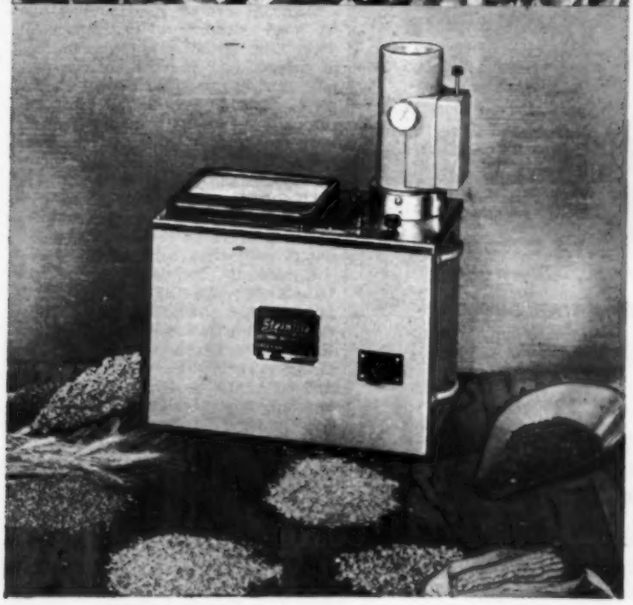
*trade up to reliable moisture testing . . . trade for the*

**Steinlite** 500-RC



For years the standard of the grain trade, Steinlite moisture testers are more widely used than all other makes of testers combined. It didn't just happen that way . . . years of research and improvement have been invested in every Steinlite model.

And now the new 500-RC with the new king-size sample tops them all! Here's how the Steinlite 500-RC gives you more of everything you need for better moisture testing:

**NEW KING-SIZE SAMPLE**—Now you get a better, more representative test of the entire load with the big new 250-gram sample. Nothing to grind . . . retest the sample easily or return it to the load totally undamaged.

**INSTANT ACCURACY**—Make perfect tests of grain right from the drier or samples of mixed moisture content in seconds . . . no need to wait hours for moisture equalization.

**FAST, EASY OPERATION**—No chance for human error, you just drop the sample in the test cell, and check the automatic meter reading . . . no buttons to push, no dials to adjust. One scale for all moisture ranges.

**IMPROVED FEATURES**—New, large 9-inch meter . . . easy-to-read, built-in, eye-level thermometer . . . new round funnel with automatic reset . . . redesigned circuit with overlap elimination.

**GUARANTEED PERFORMANCE**—Your new Steinlite 500-RC is furnished with a full year's factory guarantee and free loaner service is provided for the life of the Steinlite. You're assured of having topnotch moisture testing facilities at all times.

Protect your grain profits with the most accurate moisture testing possible. See your Seedburo representative or write us for complete information on the Steinlite 500-RC and the generous trade-in allowances being offered for your present equipment.

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# Why Broilers Flourish in The Southeast

**By Edward Karpoff**
**Agricultural Economist**
**U.S. Department of Agriculture**

Nature imposes few limitations upon the location of poultry production in the U.S.—eggs and poultry meat can be produced in every state. Why, then, is broiler production greater in the South than in any other region?

The starting point for a strict economic analysis of this question would be the difference between production costs and returns in different places.

**Costs**

Production costs vary among locations, but some relatively high-cost producing states have an advantage in marketing that enables them to continue as important competitors in egg and poultry production. In some states, high costs are offset by closeness to market and consequent higher-than-average prices for products.

Feed represents about 60% of the cost of producing poultry. So a location close to the source of feed supply tends to favor a poultry enterprise. Ordinarily this would be construed to favor a midwestern location, and in fact in some communities it does, but before we generalize, let's look a little closer at the data.

Chickens don't eat just straight feed grains. The economics of feeding are based on the price of a balanced ration. And on that price, the advantage of being close to crop sources becomes obscured by trade customs affecting markups, by credit practices, and by the degree of competition prevailing among suppliers.

Labor costs and alternative work opportunities also affect the location of production. For broilers, this is probably the principal location factor.

Broiler production in the last few years has expanded most rapidly in Georgia, Alabama, and Mississippi. In those states, the 1958 composite farm wage rate is estimated to have been about 50¢ per hour or less, contrasted with the U.S. average of 75¢ per hour during the year. As a consequence, broiler growing as a new or additional source of income has shown its fastest recent growth in the Southeast.

This concept of where poultry can be produced most cheaply has to be balanced against an understanding of where the ultimate markets are and where the highest prices can accordingly be expected. Cities and towns represent our markets for eggs and poultry. It is to the big central markets that we have to look for the forces that make prices.

The areas where poultry enterprises will grow and prosper have to be specialized enough, and to include sufficient volume, to support the service and marketing facilities that the modern poultry industry needs.

A lone commercial poultry farmer, isolated among farmers pursuing other specialties, won't have a choice of feed suppliers competing for his business.

**Outlets**

When the isolated commercial producer has eggs or chickens to sell in quantities larger than local retailing would absorb, again he would have to create an outlet rather than find a choice of readymade outlets such as occur in an established poultry community.

In an established poultry community, the already-existing marketing facilities handle sufficient volume to enable each buyer to keep his operating costs fairly low, and to compete from an initial price level that reflects low overhead costs per unit. This condition is frequently overlooked by people considering only the physical aspects of poultry production. For an independent pioneer to undertake any kind of poultry production on a scale sharply different from nearby layouts is to undertake a difficult economic challenge. Unless carefully planned by adequately financed agencies, the poultry business will not mushroom up overnight in new areas.

**Financing**

This leads us to the subject of broiler financing. Certainly in the development of chicken meat production the business sprang up overnight in new areas. It did indeed, but under circumstances that fit the limitation in the preceding paragraph, "carefully planned . . . adequately financed . . ."

The central figure in broiler production is the financier or contractor. Even a small contractor—a crossroads feed dealer—will put out a flock a week. By his own enterprise he has created a local specialized poultry industry—to say nothing of additional similar promotions probably originating from other nearby feed dealers.

Contract broiler growing has had its most enthusiastic acceptance in areas that lacked satisfactory sources of income and employment for surplus farm population. In the Chesapeake Bay area, broilers were accepted when profits from egg production and from vegetable crops were failing. In northwest Arkansas, fruit enterprises, particularly peaches, were on the downgrade. Returns from cotton farming were unsatisfactory in north Georgia when the broiler industry gained its toehold there.

Chronically low income, or the failure of previous agricultural standbys, created circumstances in which the broiler industry could thrive, but this does not explain why it grew in Georgia earlier than in Mississippi and Alabama, or why the center of hatching egg production remained so long in New England. We look to a

*EDITOR'S NOTE: The accompanying article—from an issue of Agricultural Situation, publication of USDA's Agricultural Marketing Service—points out that while nature imposes few restrictions on production of poultry meat and eggs, other factors play an important role in establishing geographical location of the industry. Edward Karpoff, the author, notes that distance and accessibility of markets, labor costs, alternative work opportunities, local market facilities, financing and individual personalities all have had a role in making the Southeast the major broiler-producing area of the nation.*

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study of people and personalities for explanations of these aspects of the development of the industry.

The dynamic personality of one individual can explain why nearly equivalent resources in neighboring states aren't developed equally.

Personality and personal choices influenced the developers of broiler production in Georgia, and the New England breeders who had already developed fast-growing strains of Plymouth Rock and New Hampshire and Rhode Island Red chickens at the time a demand materialized for broiler stock.

The financial margins in broiler production have now narrowed considerably, and the industry is firmly established in a format of agri-business which tends to concentrate the opportunities for the decisions that result in innovations. But those decisions are still occurring with great regularity, and they are the ones that keep actual broiler practice in the field so closely on the heels of the laboratory recommendations.

## *Excessive Feeding Of Additives Reported*

EAST LANSING, MICH.—Excessive use of a feed additive has caused some Michigan beef cattle feeders trouble, according to Hugh Henderson, extension beef cattle specialist, Michigan State University.

Mr. Henderson said side effects from feeding too much of the additive, stilbestrol, reduce the carcass quality and lower its sales value. "It's not the stilbestrol itself that causes the trouble," he said. "It's just that some farmers are putting too much of it in the ration."

In advanced stages, he said, female animals may go into a prolapse. This requires that animals be disposed of immediately, even though they haven't reached slaughter finish.

Mr. Henderson explained that many feeders are adding 10 mg. stilbestrol to the ration for light steers and heifers. "This is where the trouble is," he says. "Heifers under 500 lb. just can't take that amount."

If a farmer can see the side effects developing, the specialist said, he can take the animal off stilbestrol and usually ward off the final prolapse phases. After side effects disappear, the material can be put back in the ration.

Mr. Henderson commented that a farmer feeding cattle can hardly afford not to use stilbestrol and other modern-day feed additives in his rations, but he must be careful to use the proper amount if he is to avoid trouble and still get the benefits of faster growth and better feed efficiency the materials can provide.

To prevent trouble in the first place, Mr. Henderson suggested that farmers put 5 mg. in the ration until heifers and steers scale over 500 lb. Steers, he said, can make profitable use of 10 mg. stilbestrol by the time they are between 600-700 lb.

Heifers, according to Mr. Henderson, should be heavier than 750 lb. before the full 10 mg. dose is added to their ration.

## Joe Cali Dies

CUPERTINO, CAL.—Joe Cali, one of the two founders of R. Cali and Brother, died recently following an illness.

Mr. Cali and his brother, Rosario, founded the feed firm in 1923. They built it into a major West Coast operation. In that period of time they expanded to a point where they employ 100 persons to process a large variety of dairy and poultry feed products, and do custom milling, grinding, rolling, and crumbling.

Rosario Cali and son, Ed, are now managers of the operation.

### HONORED AT DINNER

LITCHFIELD, ILL.—A farewell dinner was held here recently for Jewell Sims, who has retired after 34 years of sales service with the Ralston Purina Co. Mr. Sims was presented with a new auto by dealers he had served, and was honored with speeches by Ray Rowland, president, Ralston Purina, and William Cheek, Illinois state sales manager. The dinner meeting was conducted by Dale Rowland, who was named Mr. Sims' successor.


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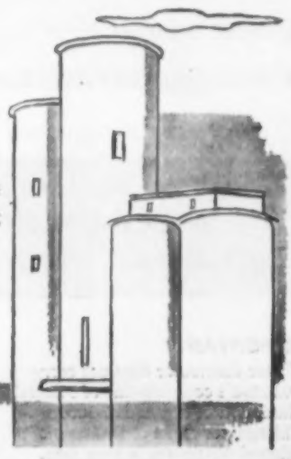

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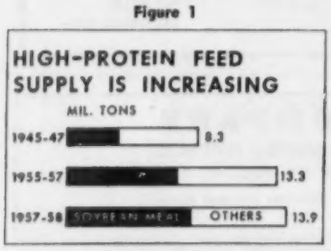
# Feeders Use More High-Protein Feed, Economist Reports

WASHINGTON — The growth of the formula feed industry was noted by a U.S. Department of Agriculture economist recently as one of several reasons for a rapidly-expanding demand for high-protein feeds by U.S. livestock and poultry producers.

Figure 1



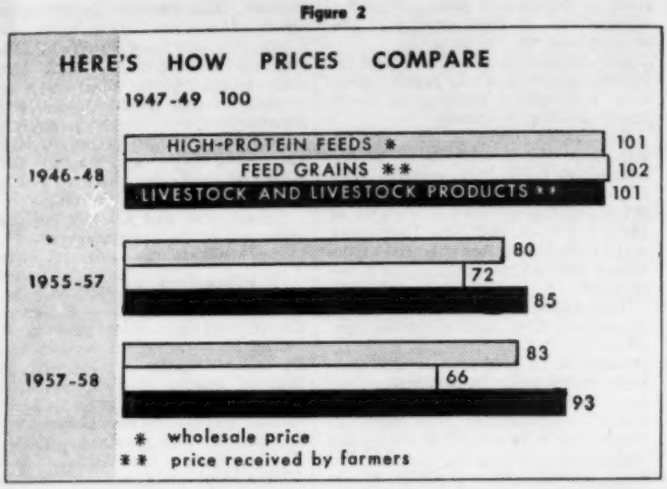

William R. Askew, reporting in the Agricultural Situation, a publication of the Agricultural Marketing Service, said the growth of the formula feed industry has created a special demand.

"The industry can assemble and handle large quantities of these proteins efficiently and economically while many farmers cannot," he reported. "In 1954, the industry used more than 70% of the soybean meal, fish meal, meat meal, corn gluten feed and meal and brewers' and distillers' grains consumed domestically."

The formula feed industry, however, is only one of many factors responsible for the increasingly important role played by high-protein feeds, he said. He pointed out that most high-protein feeds fill a special need that can't be filled by grains alone. They help raise the feeding value without a corresponding increase in bulk. Some of them also have other nutritional factors of value to the feeder.

Oilmeals, he said, moved upward in supply just before and during World War II as a result of the demand for edible oils. This stimulated soybean production. As meal became more readily available and gained acceptance, demand increased. This, in turn, became an important factor in expanding soybean acreage and production.

Figure 2




The other two leading oilmeals, cottonseed and linseed, are closely tied to the production of cotton and linseed oil, and the demand for these meals is not too important a factor in their production, Mr. Askew said.

Production of other high-protein feeds, meanwhile, has not increased quite as rapidly as the oilmeals. Production of meat and bone meal and tankage among the animal protein feeds has increased as a result of stepped up livestock production and slaughter. Fish meal production has been stimulated by the demand of commercial feed mixers, he said.

He pointed out that increased feeding of the other animal protein feeds has been partly offset by the drop in the use of noncommercial milk products for feed on the farm.

The quantity of high-protein feeds fed (soybean meal equivalent) increased 60% between 1945-47 and 1955-57. Between these two periods soybean meal consumption rose 110% to become by far the leading high protein feed. (See Figure 1.)

### Demand

Demand for protein feeds has generally kept pace with increasing supplies, and prices in recent years have been maintained in relation to both feed grain prices and livestock and livestock product prices. (See Figure 2.)

Continued strong demand during

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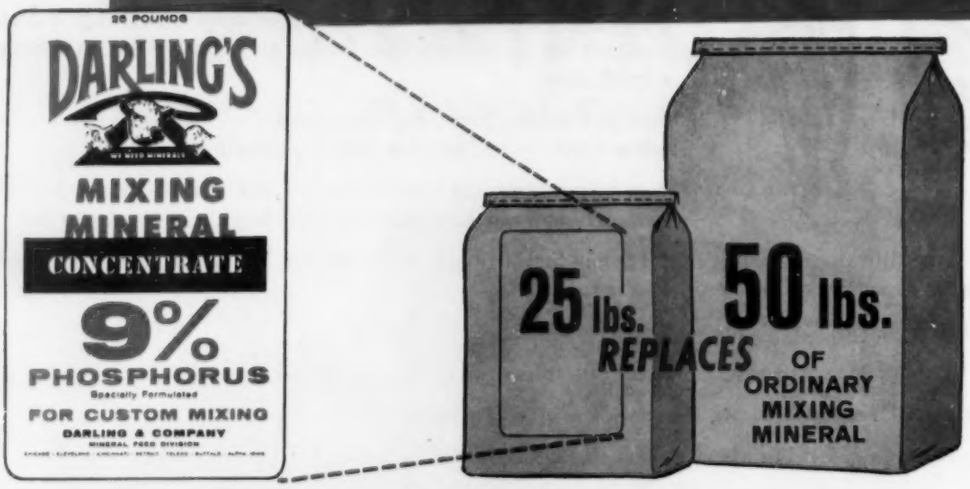


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October-December, 1958, for commercially-prepared feeds strengthened demand for high protein feeds, and even though production of oilseed meals was at record production during the period, prices were above a year earlier.

Among the factors contributing to the price rise in the high protein feeds has been a larger pig crop, increased beef cattle feeding and a 15% increase in broiler production.

"The level of high-protein feed prices during the remainder of the feeding year will depend on trends in livestock production and prices, and the level of production of these feeds, especially soybean meal," Mr. Askew said.

Among the several factors he listed as responsible for the increasing demand for these feeds was the generally rising income of consumers and the rapidly growing population which has brought increased consumption of livestock products at prices generally favorable to producers. This has stimulated increased cash expenditures for commercially-prepared feeds.

Another factor is the continuing research which has shown the profit to be gained from scientific feeding and the importance of balanced rations, he said.

Poultry and dairy rations comprise the bulk of the prepared formula feeds, but in recent years there has been a sharp increase in the production of prepared feeds for hogs and beef cattle, Mr. Askew said. He pointed out that production of prepared feeds increased over 50% from 1948 to 1958.

## New Book Published On Feed Utilization

AMES, IOWA—The pooling of ideas of 24 specialists in dairy science, production economics and statistics has resulted in a new book published recently by Iowa State College Press.

The book, "The Nutritional and Economic Aspects of Feed Utilization by Dairy Cows," grows out of a joint effort by the departments of agricultural economics and dairy of the Michigan Agricultural Experiment Station in cooperation with the North Central Dairy and Farm Management Research committees, the Farm Foundation and the U.S. Department of Agriculture.

Five general areas are covered in the publication: how to obtain efficiency in milk production; the adequacy of dairy feeding input-output research data; nutrition; how to design feeding experiments, and how to apply dairy feeding research data.

Four well known teachers and researchers from Michigan State University shared editorial responsibilities in compiling the book. They are C. R. Hoglund and Dr. Glenn L. Johnson of the agricultural economics department and Dr. Charles Lassiter and Dr. L. D. McGilliard of the dairy science department.

Copies are available from the Iowa State College Press at $3.95.

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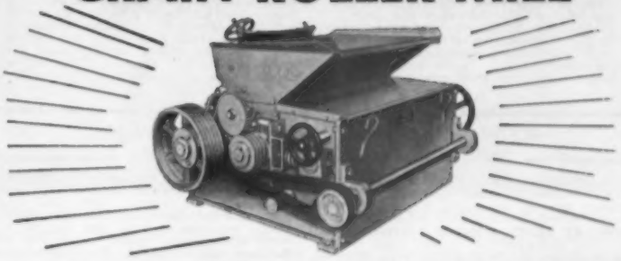

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## Promotion Launched to Boost Dairy Farming

BENTONVILLE, ARK.—A promotional campaign is underway in northwest Arkansas and southwest Missouri to encourage dairy farmers to remain in business.

Hundreds of posters urging dairymen to retain their herds have been posted in feed stores and other business houses in the region.

Agricultural officials said this was part of a campaign to "boost the sagging interest in milk production." An official pointed out that dairy farmers have been liquidating their herds at "an alarming rate" in the Arkansas-Missouri area.

The posters said: "Ozarkland is dairy land. An unlimited market for milk exists in this area . . . dairy farming is profitable."

The posters were distributed by a milk processing company following a recent meeting here in which industry leaders expressed concern about the drop in dairying in the Ozarks.

# Field Representative in Sales

Nationally-known organization has opening for a field representative in its sales division to develop markets primarily in Illinois, Michigan, and Indiana, for a new liquid feed supplement through mixer-distributors.

Position requires college degree in animal husbandry, coupled with practical experience in feeding cattle and dairy animals.

Previous sales or field experience essential.

Submit resume of background and experience to Professional Employment Manager.

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Division of
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1—Anderson Rotary Steam Dryer; like new.
1—Anderson Meal Cooler, stainless steel, rebuilt, like new.
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We have many other articles, too many to list. All the above articles are in a Soya Bean Plant and all the Screw Presses were rebuilt less than six months before the plant was shut down.

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## Seaway's Effects on Shipping Discussed

MINNEAPOLIS — The St. Lawrence Seaway was the topic of a recent meeting of the Minneapolis Grain Shippers Assn. Speakers developed two main points:

1. It is up to the grain shippers to make the most of the seaway for grain growers and others concerned.

2. It is generally accepted that Duluth, Minn., will become a grain shipping port on the seaway. The question is whether other Minnesota shippers will support the port.

E. Reece Harrill, Massena, N.Y., assistant administrator of the St. Lawrence Seaway Development Corp. and chairman of the tolls committee, developed the first point, and Robert T. Smith, port director at Duluth, developed the second.

Mr. Harrill said the big question asked by most shippers is what savings they can expect by using the seaway. In answer, he stated that a good portion of the grain grown in the Midwest could move through the seaway at savings of at least 10¢ bu. Rate adjustments by competitive routes may reduce these savings.

Shippers should analyze their costs by different routes from the farm to the overseas market, he said, to make the most of the seaway. "Any reduction that can be made in transportation costs will place the growers' products in a better position on a competitive foreign market."

Mr. Smith said that Duluth has some of the finest terminal facilities to be found on the Great Lakes and ocean coasts, and it will ship about 1 million tons of general cargo during its annual eight-month shipping season. Some business is anticipated from the Pacific Northwest, and the port may also become a service port for Alaska, he said.

He pointed out that the difference between Great Lakes and ocean vessels will make new loading techniques necessary for the grain elevators at the port.

During the business session of the meeting, it was announced that Brooks W. Fields, Jr., Burdick Grain Co., is retiring as secretary of the association. P. E. Paquette, Osborne-McMillan Elevator Co., association president, said Pete Stallcop, executive secretary of the Northwest Country Elevator Assn., is learning the duties of the office and, pending nominating committee approval, will assume them when Mr. Fields retires.

## Association Announces Poultry Feeder Patents

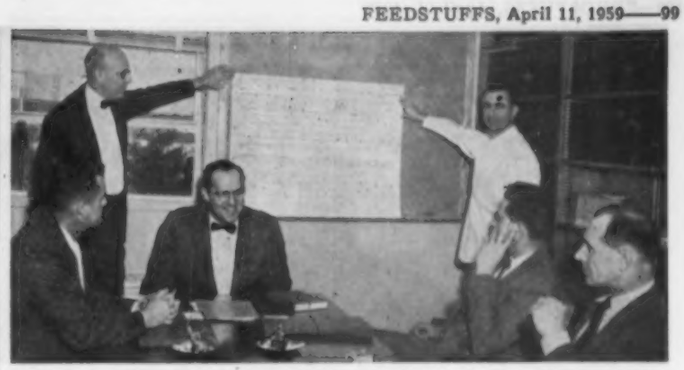
CHICAGO—A series of new patents granted to members of the Mechanical Poultry Feeder Assn. will result in wide-scale improvements in push-button feeding, according to MPFA officials.

Three of the latest patents granted to association members are for streamlined feeding equipment to accommodate layers, turkeys and meat birds in every type of housing setup. The machinery is designed to "open the door to expanded benefits for growers planning on full-scale automation," an association spokesman said.

Over 400 million birds now obtain their daily ration through mechanical feeding devices, according to the association.

### GMI DIVIDEND

MINNEAPOLIS—The board of directors of General Mills, Inc., recently declared a dividend of 75¢ per share on General Mills, Inc., common stock payable May 1, 1959 to stockholders of record April 10, 1959. This is the 123rd consecutive quarterly dividend on General Mills common stock, the directors said.



**SALES TRAINING—Robert L. Bickford, assistant director of research for Wirthmore Feeds, Inc., Waltham, Mass., is shown at the head of the table conducting one of the sessions at the company's recent sales training school for store managers. Holding a chart against the blackboard are Dr. Brooke (left) and Dr. Mark Bert, both members of the Wirthmore research staff.**

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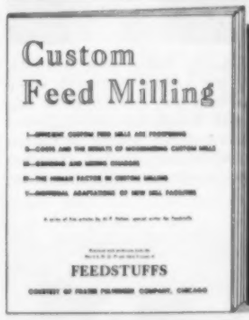


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OREGON CONVENTIONERS—Among the more than 500 members and guests of the Oregon Feed & Seed Dealers Assn. who attended the group's recent convention in Portland, Ore., were (from left): First picture—Louis Hildebrandt, Woodburn Feed & Seed Co.; Willis Freeman, Pacific Supply, Madras, and George Kitzimiller, Pacific Supply Co-op, Portland; second picture—Tom Sullivan, Continental Grain Co., Spokane, Wash., and Russ Inman, convention chairman, Inman & Co., Portland; third picture—John Alexander, Alexander & Co., Portland; Ed Wyss, Dairy Cooperative Assn., Portland, and Jerry Fielder, Dixon Dryer Co., Dixon, Cal.; fourth picture—Knox McDaniel, Leslie Salt Co., Salt Lake City, Utah; John Marsh, Great Western Chemical Co., Portland, and Don Burlingham, Woodburn Feed Co.

# Camera Views of the News

MILLIONTH BAG—This shipment of feed by Liberty Mills, San Antonio, Texas, a part of Burrus Feed Mills, Dallas, during the annual livestock show and rodeo in San Antonio was a big one for the firm. In it was the millionth bag of Mocamo quarter horse, colt, calf and bull feed sold. Receiving the shipment was Love Hatchery & Feed, San Antonio. A. H. Love (left), owner, is shown with John Michalski, territory manager for Burrus Mills, Inc., Dallas. Mocamo was developed especially for quarter horses in the Southwest and the Latin American countries.

CHICKEN, EGG PROMOTION—Morton Salt Co., Chicago, is promoting eggs again and, for the first time in some years, is also promoting chickens as a related item to salt in its advertising. Ads such as this, in full color, are posted on billboards for viewing by as many as 45 million people a day.

SMART CHICKEN—At its recent annual conference in Cincinnati the Distillers Feed Research Council featured an exhibit showing Tina, the truck driving chicken. When Tina sets the truck in motion, a few feed grains are released in the cage. After the chicken eats these she returns to the truck to release a few more by again setting the truck in motion. At left is Judy Guttman, a model.

DFRC CONFERENCE—Many of the leading animal nutritionists presented research papers at the recent 14th annual conference of the Distillers Feed Research Council in Cincinnati. Speakers included (seated, left to right): Dr. J. R. Couch, Texas A&M College; Dr. Wise Burroughs, Iowa State College; Dr. J. K. Loosli, Cornell University; George M. Brinker, DFRC president; Dr. E. I. Robertson, John W. Eshelman & Sons and American Feed Manufacturers Assn., and Dr. Robert Grainger, University of Kentucky. Standing are (left to right): Dr. Norman Jacobson, Iowa State College; Dr. L. C. Norris, Cornell University; Dr. James Savage, University of Missouri; Dr. Damon V. Catron, Iowa State College; Dr. Lawrence E. Carpenter, DFRC executive director, and Dr. W. M. Beeson, Purdue University.

BULK FAIR—The first West Coast showing of the annual Bulk Feed Fair was held recently in Portland. Sponsored by local mill equipment houses in conjunction with Larson & Baardson, Inc., over $300,000 worth of the latest bulk handling equipment—some of which is shown—from 23 manufacturers was on display. The fair was held immediately before the annual Oregon Feed & Seed Dealers Assn. convention.

## HOG OUTPUT

(Continued from page 4)

fore, although the number of sows farrowing was up 12%. Cold weather and exceptional disease losses cut the number of pigs saved per litter by 1%.

For the July-September quarter market outlook, Mr. Simerl sees a slow increase in market supplies after early July. Total market receipts for the quarter appear likely to be only 10 to 15% larger than in 1958, he said, and prices may fluctuate around $17 to $19 compared with $20 to $23 last summer.

Farrowing plans during the late spring and summer, Mr. Simerl said, show that farmers expect to have 3.7 million sows farrow in March, April and May. This would be only 9% more than farrowed the year before. Farrowings in these months last year made up 63% of total spring farrowings. During June, July and August, the report shows that farmers plan to breed 2,287,000 sows. This would be 9% more than farrowed in the same months last year. Mr. Simerl is also looking for some increase in the later fall farrowings.

The market outlook for next fall and winter, he said, indicates that market supplies seem likely to be 10 to 12% larger than last fall and winter. In comparison, population growth will be less than 2%, although spendable consumer income may be up 4 to 6%. Supplies of competitive meats, poultry and beef, will be up at least 5%, he predicted.

## Wafer, Pellet Feeding Trials to Be Reported

ONTARIO, ORE.—A series of Oregon State College winter feeding trials comparing pellets, hay wafers and chopped hay—all fed with grain for a complete ration—will be reported at the annual Feeders Day to be held April 22 at the Malheur branch experiment station near here.

Results of the 140-day feed program will be reported at 1 p.m. following a free lunch. Forty-eight test animals divided into six lots for feed comparisons will be on display and will carry live-weight grades. The steers went on feed in late November as long-yearlings averaging 865 lb.

Flat hay wafers 4 in. in diameter will be compared with ¾-in. pellets for feed efficiency, feed waste and most economical weight gains. They were fed in "complete" form—grain included—and in plain form with loose grain for further comparisons with chopped hay and grain.

## ANIMAL AGRICULTURE

(Continued from page 1)

and high quality female types for herd replacement.

In poultry, where the egg itself determines the sex, it may be possible to do away with the male and rely on "chemical parthenogenesis."

The development of a sexless, multipurpose animal is a distinct possibility, Dr. Andrews continued. Also, he said, it is now known that the entire life cycle is conditioned by hormones, and the use of hormonal substances in fattening cattle is only the beginning of growth control.

From a theoretical standpoint there is no reason why a castrated calf of either beef or dairy type cannot be caused to gain at the rate of 4 lb. per day, produce meat acceptable to the most critical consumer, or if subjected to a different hormonal regime, produce milk at a rate equal to that of our best dairy types.

However, Dr. Andrews said, "studies being carried on with simple cells, particularly viruses, hold promises of changes far more revolutionary" than those outlined above.

Successful vaccines for various diseases of humans as well as animals are not far off, he indicated. However, he added, "the bigger payoff from virus research may come from new knowledge concerning the chemistry of the cell." The heart of the cell is the nucleus and within the nucleus are found the chromosomes and genes.

In studying viruses it has been found that two nucleic acids seem to hold the key to cell multiplication and the heritable characteristics of the cell.

"Scientists have had at least limited success in synthesizing some viruses and considerable success in modifying genes," Dr. Andrews said. "A breakthrough in the field of molecular biochemistry might simultaneously result in many new vaccines, the solution of the cancer problem and controlled heredity . . .

"When the chemical nature of the genes for growth, lactation and egg production become known, it may be possible to modify the organism at will. With proper internal regulation a strain of cattle should be able to produce meat, milk, fat or work power at the will of the owner.

"If this comes to pass, most of us will have to run hard just to remain in the old orbit, to say nothing of getting into a better one."

## MOLASSES

(Continued from page 1)

the basis of 2¢ per pound of sugar content. Some 20 million gallons of 1958 crop invert molasses remain unsold, according to the Foreign Agricultural Service.

Also reported by the Molasses Market News was a Puerto Rican producers' contract to sell about 121,000 gal. of blackstrap, 88.6° Brix, at 11¢ gal., gross price at port, and a summary of 1959 Hawaiian blackstrap production and shipments to the U.S. mainland.

For January-March, 1959, Hawaiian production has totaled 8,761,698 gal., compared with 1,055,754 for the same period a year earlier. Shipments to the U.S. mainland during the three-month period this year totaled 12,157,119 gallons, compared with 3,146,400 during the same period of 1958.

Exports of industrial molasses from the U.S. during January and February totaled 4,879,799, compared to 2,176,570 during the same period in 1958.

## BILLS

(Continued from page 1)

level for wheat for the 1960 crop. The issue will be to what lower level.

For the speculative markets, the ups and downs of the committee decision will juggle futures market prices.

That condition should conform to recently published statements of officials on the U.S. Department of Agriculture price support decisions. They will not be changed on this, an official opinion.

The Democratic majority in Congress, particularly that in the House Agriculture Committee, may be determined to approve price support boosting bills for feed grains, but this is primarily an act for home consumption.

It can be said without contradiction in informed circles that there will be no farm legislation, with the exception of an amendment, which will put back the level of support for wheat in the next crop year. The issue will be how deeply the 1960 crop year wheat price support program is cut. It now seems that the drop in wheat price supports may be to as low as about $1.45 bu.

## TOP OF THE HOPPER

(Continued from page 2)

Speaking of hay, we came across another prediction that makes the last one look old already. The editors of Progressive Farmer brainstormed the future recently and came up with several guesses of what farming and farm science will be like 20 years from now. One of them is this: Instead of thinking in terms of grass or hay alone, we'll be making cellulose, one of the key ingredients in low cost livestock feeding.

All of which will take research time and dollars in considerable quantity.

In planning research, someone has to make decisions on how much of these two items can logically be spent to find some new answers. From many reports, these decisions are becoming a great deal tougher for executives of chemical and pharmaceutical companies which supply new feed additives and medicaments. Tightening up of Food and Drug Administration requirements for introducing new feed products has resulted in expenditure of some astounding amounts of money to conduct the necessary tests for products recently accepted or considered about "on the verge." We've heard reports of as much as a million to two million dollars being put into research required to support clearance applications.

One might observe that the producer of such a product stands a chance to recover his research investment if the product fills a need in the feed industry and becomes widely used. However, what if something still newer overtakes the product, or it turns out that demand has been grossly overestimated? These possibilities have to be pondered very thoroughly when dealing with the sums of money needed to go ahead with product development and FDA clearance. Possibly there has always been something of a gamble in such decisions, but now the stakes are much higher.

**Chemical company representatives and some feed men have expressed concern privately that the present situation may substantially slow down introduction of new products, delay improvements in feed efficiency or curbing of disease losses.**



There appears to be increasing interest in the possibility of using heated, unextracted soybeans in poultry feeds. Such a product could replace soybean meal and fat in broiler feeds. Dr. G. F. Combs recently reported some work conducted at the University of Maryland with such a product in broiler feeds. It was pointed out that the price of whole beans and soybean oil will determine the practicality of this feeding method. Research work along this line is being conducted at Delaware and at least one other university.

Driving for more efficient feeds will not end the turmoil in the broiler business, but efficiency continues to make news. It has been reported that the break even point for broiler contractors continues to move lower. Currently, break even is said to be calculated at 14¢ in Arkansas. This covers feed and other costs, plus the flat fee to the grower.

Greater efficiency is much to be desired, but most broilermen will agree that it's the price at the other end of the line—that paid for the processed birds—that is giving the industry fits. Brand identification, more promotion, new methods of marketing are getting the bulk of attention from problem-solvers now that it appears that production restraint isn't in the cards.

Some grocery chain operators indicate that 29¢ chicken isn't the traffic-puller it once was. Mrs. Housewife thinks that's the regular price of chicken, and she doesn't buy much between "loss leader" pushes. It is going to take some real merchandising to persuade her that she should pay up for a premium product, but it appears that this is one of the few approaches left.

**Another one might be in smoothing out the marketing of birds through operation of auction markets. The start made at the new Georgia Poultry Exchange gave broilermen some encouragement. A similar market is being planned in Arkansas. Delmarva has had one in operation for some time.**

During a low, low price spell, some integrators were reported to have been paying 1½¢ lb. of the capacity of the house not to produce. Sort of a private industry soil bank operation. They reasoned, reports Successful Farming, that they would lose less this way than they would have if they put the birds in, paid producers and supplied feed. By paying not to produce they have been able to keep producers "in the fold." Some are quitting contracting, the report states, "because of lack of capital to survive prolonged ruinous prices."

Meanwhile, one of our reporters says that there are a number of new broiler houses going up just northwest of Atlanta. They are not the old lean-to type with timber from the back 40. They are made of finished lumber, wired for power and piped for water.



A more tranquil picture was put into verse by Dr. J. K. Loosli of Cornell during a discussion of pelleted feed for ruminants:

**ODE TO RUMINANTS**

Upon the verdant pastures
No longer will she graze;
'Tis so much faster, safer
To feed her on a wafer
Of choice, selected hays.

Quote from Ron Kennedy, F. H. Peavey & Co., vice president and missionary for economic freedom: "The fact that dynamic capitalism has come to American farming will, in my opinion, eventually prove to be one of the greatest things ever to happen to our country, politically." Ron explained one of his speaking assignments as an effort to "start a capitalistic cell." A good way of describing the need on the part of more businessmen to accept their political responsibilities in order to preserve the kind of freedom that makes progress possible.

# The FEED MARKET

PRICE QUOTATIONS, MARKET TRENDS
OF PRINCIPAL INGREDIENTS

### A AND D FEEDING OIL

**Boston:** Demand fair; supply adequate; 600 D, 1,500 A 17½¢ lb.; 300 D, 2,250 A 18¢; 300 D, 1,500 A 16½¢; 300 D, 750 A 14¾¢; 400 D, 3,000 A 20¢; 300 D, 3,000 A 19½¢; 75 D, 750 A 14½¢.

**Denver:** Demand fair; trend steady; supply ample; 300 D, 2,250 A 22¢ lb.

**New York:** Demand fair; trend steady; supply limited; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 13½@15½¢, 1,500 A 15½@17¢, 2,250 A 17½@20¢, 3,000 A 19@21¢; 600 ICU, 1,500 A 16@18¢, 2,250 A 18@19½¢; f.o.b. Massachusetts, New York or Pennsylvania.

**Minneapolis:** 10,000 A 35¢ lb.; 300 D, 2,250 A 21½¢ lb.; 300 D, 1,500 A 20½¢ lb.; 300 D, 75 A 18½¢ lb.

**Chicago:** Demand irregular; trend steady; supply adequate; straight A feeding oil, with 10,000 units vitamin A per gram 7@7½¢ a million units of vitamin A; l.c.l. packed in 55-lb. drums, drums included, f.o.b. Chicago.

### ALFALFA MEAL

**Philadelphia:** Demand dull; supply fair; 17% dehydrated $81.50.

**Omaha:** Demand fair; trend steady; supply limited; 17% dehydrated, 100,000 A units, bulk pellets $60; sacked meal $65; Omaha basis.

**St. Louis:** Demand slow; trend steady; supply ample; suncured, 13% fine $39; 17%, 100,000 A $70.

**Ft. Worth:** Demand good on dehydrated, poor on suncured; supply sufficient, except limited offerings on No. 1 suncured; dehydrated, 20% protein, 150,000 A $66 truck; 17% protein, 100,000 A $63 truck, rail $66; No. 1 quality suncured 13%, No. 1 ¼-in. grind $39@40, nominal, truck or rail; No. 2 quality $35@36.

**New Orleans:** Demand good; trend steady; supply light; vitamin A, 17% $79@81; pellets $77@79.

**Los Angeles:** Demand fair; trend steady; supply adequate; dehydrated meal, 17% protein, 100,000 A $51, bulk; dehydrated pellet meal, 17% protein, 100,000 A $53, bulk; suncured meal, 15% protein $42@43, bulk; suncured crumbles, 15% protein $44@45, bulk.

**Boston:** Demand fair; supply ample; dehydrated, 17% $82; suncured, 13% $50, nominal.

**Kansas City:** Demand active; trend steady; supply fairly tight although some new crop material is being offered and several suppliers are also finding occasional cars of old material that can be offered as new crop time approaches; dehydrated alfalfa with 17% protein and 100,000 units vitamin A guaranteed on arrival; reground meal $65, sacked; greased meal $67, sacked; pellets $60, bulk; 18% protein 125,000 A meal $69, sacked; 20% protein, 150,000 A new crop meal $69, bulk; suncured alfalfa demand is slow with prices unchanged, No. 1 fine ground $35, No. 1 ¼-in. $32.50@33, No. 2 ¼-in. $29, sacked.

**Cincinnati:** Demand fair; trend steady; supply adequate; 17% dehydrated, 100,000 vitamin A $78.50.

**Memphis:** Demand fair; trend lower; supply adequate; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $68.

**Portland:** Demand good; supply limited; trend unchanged; suncured, 15% $41.50; dehydrated $68.50.

**Buffalo:** Demand fair; trend steady to higher; supply poor; $80.50, Boston.

**Chicago:** Demand slow; trend sharply higher; supply light; 17% dehydrated, with 100,000 units vitamin A guaranteed $72; 15% No. 1 fine ground suncured $65.50.

**Minneapolis:** Tight supplies; fairly good demand; steady trend; 17% with 100,000 units vitamin A, reground pellets $70; oiled reground $72; bulk $3 less.

### ANIMAL FAT (STABILIZED)

**Ft. Worth:** Demand good; supply rather tight; prime tallow, tank cars 7@7½¢ lb.; drums 8½@8¾¢ lb., f.o.b. north Texas packing plants with returnable drums.

**Boston:** Demand fair; supply good; tallow 7¾¢ lb.; yellow grease 6¾¢ lb.

**San Francisco:** Demand fair; supply ample; bleachable fancy 7¾¢ lb.; yellow grease 7¼¢ lb.

**New Orleans:** Demand fair; trend steady; supply adequate; 7@7¼¢ lb., tank cars.

**Louisville:** Demand and supply good; trend steady; export demand anticipated to start shortly; bleachable white 7¼¢ lb.; white tallow 7¾¢ lb.; yellow grease 6¾¢ lb.

**Atlanta:** Demand good; trend steady; supply limited; 7¼@7¾¢ lb., bulk.

**Chicago:** Demand very quiet; supply ample; trend steady; bleachable fancy tallow, tank truck or car lots 7¢ lb.

### BARLEY FEED

**Philadelphia:** Demand slow; supply fair; pulverized $51.50.

**Boston:** Demand slow; supply good; $47.

**San Francisco:** Demand fair; supply ample; rolled $65.60; ground $64.50.

**Milwaukee:** Demand good; supply fair; needles 91¢@$1.08; ground screenings $25.

**New Orleans:** Demand slow; trend unchanged; $64@65.

**Los Angeles:** Demand slow; trend unchanged; supply adequate; standard rolled $3.30 cwt., sacked; standard ground $3.30 cwt., sacked.

**Baltimore:** Demand better; trend steady; supply adequate; $48.50.

**Ogden:** Supply average; rolled $50@55; whole barley $42@47.

**Portland:** Demand good; supply limited; trend unchanged; rolled $63, ground $61.

**Chicago:** Demand improved; trend higher; supply adequate; $38.

NOTE: Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bagged, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

### BENTONITE (SODIUM)

**Denver:** Demand fair; trend good; supply ample; $23.

**Cincinnati:** Demand steady; supply adequate; f.o.b. Cincinnati, minimum 30-ton carlots: 80 granular $31.50; 200 mesh fine $31.

**Chicago:** Demand steady; trend firm; supply adequate; f.o.b. Wyoming and South Dakota shipping points: granular, 30 mesh $16.50; fine granular, 80 to 100 mesh $13.75; powder, 200 mesh $13.50, f.o.b. Belle Fourche, S.D., minimum 30-ton carlots, 80 granular $13.50 net; 200 mesh, fine $13.25 net.

### BLOOD FLOUR

**Louisville:** Demand fair; trend firm; supply ample; $120@125.

### BLOOD MEAL

**Louisville:** Demand good; trend firm; supply good; $120@125.

**San Francisco:** Demand good; supply tight; $6 a unit of ammonia.

**New Orleans:** Demand slow; trend unchanged; supply ample; $120@125.

**Los Angeles:** Demand fair; trend steady; supply limited; $7.50 a unit of ammonia.

**Portland:** Demand good; supply limited; trend unchanged; $130.

**Chicago:** Demand fair; trend higher; supply light; $142.50 in 100-lb. bags, guaranteed 80% protein.

**Ogden:** Supply average; $115 in 100-lb. bags, f.o.b. Ogden.

### BONE MEAL (STEAMED)

**Boston:** Demand and supply steady; $90.

**Louisville:** Demand fair; trend strong; supply light; $105@115.

**Denver:** Demand good; trend strong; supply nil (on strike); $80, nominal, Bay Shore, Cal.

**Ft. Worth:** Demand good; supply light; $90.

**San Francisco:** Demand good; supply ample; $75.

**New Orleans:** Demand slow; supply light; trend steady; $95@105.

**Los Angeles:** Demand fair; trend firmer; supply tight; imported $76 in 20-ton lots.

**Chicago:** Demand good; trend higher; supply light; $107.50 ton in 50-lb. bags.

**Portland:** Demand good; supply limited; trend unchanged; $100.

**Buffalo:** Demand good; trend steady; supply limited; $100.

**Cincinnati:** Demand good; trend steady; supply short; $115.

### BREWERS DRIED GRAINS

**Philadelphia:** Demand and supply fair; trend unsettled; $58.

**Louisville:** Demand good; trend firm; supply ample; $52.

**Ft. Worth:** Demand fair; supply moderate; 26% protein $56.

**Boston:** Demand fair; supply good; 22% $54, sacked; 26% $53, bulk.

**San Francisco:** Demand fair; supply ample; $54.

**Milwaukee:** Demand good; supply fair; $53.50@54, April.

**St. Louis:** Demand good; trend steady; supply ample; $50.

**New Orleans:** Demand fair; trend steady; supply ample; $55@56.50.

**Los Angeles:** Demand fair; trend unchanged; supply limited; $49.50 bulk, $53.50 sacked.

**Cincinnati:** Demand poor; trend steady; supply adequate; $61.

**Buffalo:** Demand good; trend steady; supply fair; $54, bulk, Boston.

**Chicago:** Demand and supply fair; trend easier; 26% $53.50.

### BREWERS DRIED YEAST

**Louisville:** Demand fair; trend firm; supply normal; 10@10½¢ lb.

**Denver:** Demand light; trend steady; supply ample; 9¢ lb., f.o.b. Golden, Colo.

**Omaha:** 10½¢ lb.

**Boston:** Demand and supply steady; 11¢ lb.

**San Francisco:** Damand fair; supply good; 10¢ lb.

**Los Angeles:** Demand fair; trend unchanged; supply limited; 10¢ lb. in 5-ton lots; 11¢ lb. in 1-ton lots; 12¢ lb. in less than 1-ton lots.

**Portland:** Demand good; supply ample; trend unchanged; 8½¢ lb.

**St. Louis:** Demand good; trend easier; supply limited; 9½¢ lb. in carlots; 10½¢ lb. in ton lots; 11½¢ lb. in less than ton lots.

**Buffalo:** Demand good; trend steady; supply limited; $10.75 cwt.

**Chicago:** Demand good; trend steady; supply limited; 9½@10¢ lb. in carlots; 9¾@12¼¢ lb. l.c.l.

**Milwaukee:** Demand good; trend steady; supply limited; 10@11¢ lb. in carlots; 10½@12½¢ lb., l.c.l.

**Cincinnati:** Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

**Pittsburgh:** Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

**New Orleans:** Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

**New York:** Carlots 9½¢ lb.; 10-ton lots 10¢ lb.; 5-ton lots 10½¢ lb.; ton lots 11¢ lb., f.o.b. New Jersey.

### BUTTERMILK-CONDENSED

**Philadelphia:** Demand slow; supply light; $4.25 cwt.

**Louisville:** Demand dull; trend steady; supply light; $4.25 cwt.

**San Francisco:** Demand fair; supply good; $5 cwt.

**Wichita:** Demand good; supply insufficient; $2.90 cwt. in barrels.

**Boston:** Demand slow; supply tight; 3½¢ lb.

**Los Angeles:** Demand fair; trend unchanged; supply adequate; 5¾¢ lb. in 100-lb. lots; 4½¢ lb. in 500-lb. lots.

**New Orleans:** Demand slow; supply normal; trend steady; $4.25@4.30 cwt.

**Chicago:** Demand fair; trend steady; supply good; $3.25@3.50 cwt. in carlots.

**Ogden:** Supply average; $4.40, 100-lb. drum.

### CALCITE CRYSTALS AND FLOUR

(All prices net, including freight)

**New York:** Crystals $15.28, flour $10.28.
**Buffalo:** Crystals $16.11, flour $11.11.
**Toledo:** Crystals $17.96, flour $12.96.
**Boston:** Crystals $16.53, flour $11.63.
**Limecrest, N.J.:** Crystals $10.50, flour $5.50.

### CALCIUM CARBONATE

**Los Angeles:** Demand fair; trend steady; supply ample; $10.25.

**Chicago:** Demand steady; trend firm; supply adequate; fine grind, plain, 100-lb. bags $9.54; bulk, in hopper cars $7.54; bulk in boxcars $8.04; granular grind $1 premium.

**Cincinnati:** Demand fair; trend steady; supply adequate; $8@9 cwt.

**Minneapolis:** Fine grind, 50-lb. bag $12.25, 100-lb. bag $11.50; bulk, boxcar $10; bulk hopper $9.50; coarse grind $1 premium, delivered Minneapolis.

### CHARCOAL

**Boston:** Demand and supply steady; $100.

**San Francisco:** Demand steady; supply ample; $141.

**Los Angeles:** Demand fair; trend unchanged; supply limited; hardwood poultry $156 sacked in less than ton lots; $144.40 sacked in ton lots.

**Chicago:** Demand quiet; trend steady; supply ample; poultry $110 in 50-lb. multiwalls.

### COCONUT OIL MEAL

**San Francisco:** Demand good; supply tight; solvent $68; expeller $85.50.

**Los Angeles:** Demand better for forward position; trend weaker; supply adequate; copra cake $75@77, bulk.

**Portland:** Demand slow; supply ample; trend unchanged; $87.

### COD LIVER OIL (FORTIFIED)

**New York:** Demand limited; trend steady; supply fair; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 14½@15½¢, 1,500 A 18½@20¢, 2,250 A 18½@21¢, 3,000 A 21½@23¢; 600 ICU, 1,500 A 17½@19½¢, 2,250 A 20@22¢, 3,000 A 22@23¢; f.o.b. Massachusetts, New York or Pennsylvania.

**Boston:** Demand fair; supply adequate; 600 D, 2,250 A 19¢ lb.; 300 D, 3,000 A 20½¢; 300 D, 2,250 A 18½¢; 600 D, 1,500 A 18¢; 300 D, 1,500 A 17¢.

### CONDENSED FISH SOLUBLES

**Denver:** Demand fair; trend steady; supply ample; dried $182.40, f.o.b. Denver.

**New York:** Demand good; trend steady; supply tight; 5½@5¾¢ lb., f.o.b. eastern shore.

**Boston:** Demand active; supply scarce; 5¢ lb., nominal.

**New Orleans:** Demand light; supply limited; trend steady; 50% solid $107@110.

**Los Angeles:** Demand fair; trend unchanged; supply limited; 5¢ lb.

### CORN GLUTEN FEED AND MEAL

(All quotations for all cities are sacked basis, bulk basis $5 less)

**Minneapolis:** Feed $57.80, meal $88.80.
**Atlanta:** Feed $63.98, meal $94.98.
**Birmingham:** Feed $62.64, meal $93.64.
**Boston:** Feed $62.84, meal $93.84.
**Chicago:** Feed $51, meal $82.
**Cleveland:** Feed $59.14, meal $90.14.
**Denver:** Feed $61.51, meal $92.51.
**Ft. Worth:** Feed $59.96, meal $90.96.
**Indianapolis:** Feed $56.36, meal $87.36.
**Kansas City:** Feed $51, meal $82.
**Louisville:** Feed $58.21, meal $89.21.
**New Orleans:** Feed $61.20, meal $92.20.
**New York:** Feed $62.43, meal $93.45.
**Norfolk:** Feed $61.71, meal $92.71.
**Philadelphia:** Feed $62.02, meal $93.02.
**Pittsburgh:** Feed $59.96, meal $90.96.
**St. Louis:** Feed $51, meal $82.

### CORN OIL MEAL

**Louisville:** Demand dull; trend steady; supply light; $58.45.

**Cincinnati:** Demand fair; trend steady; supply adequate; $56.

### COTTONSEED OIL MEAL

**Denver:** Demand fair; trend steady; supply ample; $70.60.

**Omaha:** Demand fair; trend strong; supply ample; 41% solvent $67.10, bulk.

**Wichita:** Demand fair; supply sufficient; 41% old process $72.

**Philadelphia:** Demand slow; supply fair; $80.50.

**Louisville:** Demand slow; trend strong; supply light; old process $71, up $1; new process $70, up $2.

**Ft. Worth:** Demand fair; supply sufficient; 41% old process $71; pellets $2 additional; cottonseed hulls $19.

**Boston:** Demand fair; supply adequate; $80.

**San Francisco:** Demand good; supply tight; 41% $75.70; 44% $78.70.

**St. Louis:** Demand fair; trend firm; supply ample; solvent $68.50.

**New Orleans:** Demand fair; trend steady; supply adequate; $76.50@77.

**Los Angeles:** Demand fair; trend steady; supply adequate; $71@72, bulk.

**Kansas City:** Demand slow; trend steady; supply adequate; old process meal $65, sacked, Memphis; solvent meal $70, sacked, delivered, Kansas City, material coming from west Texas.

**Portland:** Demand slow; supply ample; trend unchanged; $75.

**Cincinnati:** Demand fair; trend steady to higher; supply adequate; $72.50.

**Buffalo:** Demand poor; trend steady; supply fair; $82.50, Boston.

**Atlanta:** Demand fair; trend steady; supply ample; 41% $69@70.

**Memphis:** Demand fair; trend steady; supply ample; prime 41% protein, old process $64.50; new process, 41% solvent $64.

**Ogden:** Supply normal; 41% $77@82.

**Chicago:** Demand slow; trend firm; supply good; hydraulic or expeller $64.50; solvent $64, Memphis basis.

### CURACAO PHOSPHATE

**New York:** Trend steady; ground Curacao phosphate in 100-lb. bags $48, f.o.b. cars or trucks, New Orleans, Jacksonville, Fla., or Philadelphia.

### D ACTIVATED ANIMAL STEROL, POWDERED

**New York:** Demand and supply good; trend steady; price per lb. in 50- and 100-lb. bags or 100-lb. drums: 1,500 ICU 8@12¢ bagged, 12@13¢ drums; 3,000 ICU 13@17¢ bagged, 17@18¢ drums, f.o.b. or delivered basis Pennsylvania, Delaware or New York.

**Kansas City:** Demand fair; trend steady; supply adequate; 1,500 ICU 9¾@10¢ lb.; 3,000 ICU 11½@12¢ lb., in ton lots or larger.

**Cincinnati:** Demand fair; trend steady; supply ample; 1,500 ICU 11@12¢ lb.; 3,000 ICU 18¢ lb., warehouse.

### DEACTIVATED PLANT STEROL, POWDERED

**Chicago:** Demand good; trend firm; supply adequate; 4,000,000 U.S.P. units per lb. 15¢ lb. in ton lots, less than ton lots 17¢ lb.; 12,000,000 units per lb., 5 tons to carload, 28¢ lb.; ton lots and less 30¢ lb.

### DEFLUORINATED PHOSPHATE

**Tupelo, Miss.:** Minimum phosphorus 13%, minimum calcium 31%, maximum fluorine .12%, $51 net ton, f.o.b. Tupelo in 100-lb. multiwall bags, $48 in bulk.

**Wales, Tenn.:** Minimum phosphorus 18%, minimum calcium 33%, maximum calcium 36%, maximum fluorine .18% $69.12 net ton, f.o.b. Wales in 100-lb. multiwall bags, $3 less in bulk.

**Houston:** Minimum phosphorus 19%, minimum calcium 32%, maximum calcium 35%, maximum fluorine .19% $71.50, net ton, f.o.b. Houston, 100-lb. multiwall paper bags; $68.50 in bulk.

**Coronet, Fla.:** Minimum phosphorus 18%, minimum calcium 31%, maximum calcium 34%, maximum fluorine .18%; carlots $63.50, truck load $64.25, net ton, f.o.b. Coronet in 100-lb. multiwall bags $60.50 and $61.25 in bulk.

**Cincinnati:** 18% phosphorus $81, sacked; 13% phosphorus $64.98, sacked, Cincinnati.

### DICALCIUM PHOSPHATE

**Chicago:** Stock food grade, 18.5% phosphorus, 20,000 lb. or more $83.25 net ton in 100-lb. papers, basis Chicago Heights, Ill., or Nashville, Tenn.; less than 20,000 lb. $93.25; 21% phosphorus, 20,000 lb. or more $94.50, basis Chicago Heights and Nashville; less than 20,000 lb. $104.50; bulk boxcars or hoppers $3 net ton less than bagged material.

**Bonnie, Fla.:** Minimum phosphorus 18½%, granular $83.25; freight equalized with closest producing point, carload basis.

**Texas City, Texas:** 18.5% minimum phosphorus, 21% minimum calcium, 24% maximum, granular $77.70 net ton, f.o.b. Texas City in 100-lb. multiwall bags; bulk, boxcars and hoppers, $3 net ton less than bagged material.

**Columbia, Tenn.:** Minimum phosphorus 18½%, minimum 25% calcium, maximum .01% fluorine guaranteed $83.25, f.o.b. Columbia, in 100-lb. multiwall bags; freight equalized with nearest producing point, carload basis; bulk $3 ton less.

**Minneapolis:** 18.5% phosphorus, 24% calcium granular or fine ground $94.10, delivered; $3 less in bulk.

**Trenton, Mich.:** Minimum phosphorus 18½%, maximum fluorine .03% guaranteed $83.25, f.o.b. Trenton in 100-lb. multiwalls; minimum phosphorus 21%, maximum fluorine .03% guaranteed $94.50, f.o.b. Trenton in 100-lb. multiwall bags.

**Portland:** Demand slow; supply ample; trend unchanged; $115.

**Cincinnati:** 18½% phosphorus $92@93.

**Denver:** Demand good; trend steady; supply ample; $93.60.

### DISTILLERS DRIED GRAINS

**Louisville:** Demand good; trend steady; supply fair; bourbon: light $58, dark $59, solubles $77.

**Philadelphia:** Demand slow; trend unsettled; supply light; lights $68; darks $69.

**Boston:** Demand good; supply light; light $67@68, dark $69@70.

**San Francisco:** Demand fair; supply ample; solubles $85.

**Los Angeles:** Demand good; trend weaker; supply ample; molasses, new crop, April $47.30 bulk.

**Cincinnati:** Demand poor; trend steady; supply adequate; by truck $59.

**Buffalo:** Demand fair; trend steady; supply fair; $62, bulk, Boston.

### DRIED BEET PULP

**Denver:** Demand good; trend steady; supply ample; $40.23.

**Ft. Worth:** Demand slow; supply sufficient; carlots, 50-lb. papers, April $61.

**Boston:** Demand fair; supply adequate; domestic $59.75; Canadian $60.50.

**San Francisco:** Demand good; supply fair; $55.50.
**Milwaukee:** Demand good; supply fair; plain $54; molasses $54.
**New Orleans:** Demand fair; trend steady; supply adequate; $60@61.
**Buffalo:** Demand fair; trend steady; supply adequate; $60.50, Boston.
**Portland:** Demand good; supply limited; trend unchanged; $54.
**Atlanta:** Demand fair; trend steady; supply ample; $67.85 in 50-lb. papers; $67.70 in 100-lb. burlaps.
**Ogden:** Supply normal; $44@48.

### DRIED BUTTERMILK

**Louisville:** Demand slow; trend stronger; supply light; 12@12½¢ lb.
**San Francisco:** Demand fair; supply ample; 11½¢ lb.
**Milwaukee:** Demand and supply fair; $10 cwt.
**New Orleans:** Demand slow; trend unchanged; supply adequate; $11.50@12 cwt.
**Los Angeles:** Demand fair; trend firmer; supply adequate; 12¢ lb.
**Ogden:** Supply normal; $8.50, 100-lb. bag.
**Chicago:** Demand good; trend easier; supply light; medium acid $10.75@11 cwt.; sweet cream $11@11.25 cwt. in carlots.
**Buffalo:** Demand good; trend steady; supply limited; $11.85 cwt.

### DRIED CITRUS PULP

**Boston:** Demand slow; supply ample; $35.
**San Francisco:** Demand and supply fair; meal $54.
**New Orleans:** Demand fair; trend steady; supply ample; $35@40, f.o.b. Florida.
**Los Angeles:** Demand and trend steady; supply ample; orange pulp $42, bulk; lemon pulp $40, bulk.
**Atlanta:** Demand good; trend steady; supply ample; $35@40, f.o.b. Florida producing mills; meal $30@35, f.o.b. Florida producing mills.
**Buffalo:** Demand poor; trend steady; supply adequate; $37.50, f.o.b. Florida points.

### DRIED SKIM MILK

**Philadelphia:** Demand slow; supply light; $12.50 cwt.
**Louisville:** Demand slow; trend strong; supply light; 12¢ lb.
**Boston:** Demand active; supply scarce; 12¢ lb., nominal.
**San Francisco:** Demand and supply fair; 13½¢ lb.
**Milwaukee:** Fair demand; fair supply; $11 cwt.
**New Orleans:** Demand fair; trend firm; supply ample; $12@12.50 cwt.
**Los Angeles:** Demand fair; trend unchanged; supply adequate; 14¢ lb. in less than ton lots; 13¾¢ lb. in ton lots.
**Buffalo:** Demand fair; trend steady; supply ample; spray $10.65 cwt.
**Cincinnati:** Demand fair; trend steady; supply adequate; 10⅝@10¾¢ lb.
**Chicago:** Demand good; trend easier; supply fair; $10.60@10.85 cwt., carlots.
**Portland:** Demand good; supply ample; trend unchanged; 13¢ lb.
**Ogden:** Supply normal; $15.15, 100-lb. drum.

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**Minneapolis:** Tight supplies; good demand; firm trend; $11@11.10 cwt.

### DRIED WHEY

**Philadelphia:** Demand slow; supply light; $6.50 cwt.
**Louisville:** Demand slow; trend steady; supply ample; 6½¢ lb.
**Denver:** Demand fair; trend steady; supply ample; $6.05 cwt.
**Ft. Worth:** Demand fair; supply adequate; carlots, standard $6; $6.25 ton lots, f.o.b. warehouse, Ft. Worth.
**Boston:** Demand steady; supply short; 5½¢ lb., f.o.b. shipping points.
**San Francisco:** Demand steady; supply good; $5.75 cwt.
**New Orleans:** Demand fair; trend steady; supply adequate; $5.50@6 cwt.
**Los Angeles:** Demand fair; trend steady; supply ample; $6.10 cwt. in carloads; $6.40 cwt. in l.c.l.
**Kansas City:** Demand good; supply light; trend steady; $5.50 cwt., producers' plants for regular and partially delactosed.
**Cincinnati:** Demand fair; trend steady; supply adequate; $6.15 cwt.
**Ogden:** Supply normal; $6.90, 100-lb. bag.
**Chicago:** Demand fair; trend steady; supply adequate; $5.50, f.o.b. plant.
**Portland:** Demand good; supply ample; trend unchanged; $7 cwt.
**Minneapolis:** Fair demand; fair supply; steady trend; $5.50 cwt., producers' points.

### FEATHER MEAL (HYDROLYZED)

**Ft. Worth:** Demand excellent; supply very limited; 85% to 87% protein $108, f.o.b. trucks, north Texas plants.
**Boston:** Demand steady; supply very scarce; withdrawn because of light supply.
**Los Angeles:** Demand good; trend firm; supply ample; $1.25 a unit of protein.
**Atlanta:** Demand good; trend steady; supply about ample; $105.50, f.o.b. Georgia and Alabama producing mills.

### FISH MEAL

**Louisville:** Demand slow; trend steady; supply light; $170.
**Denver:** Demand good; trend steady; supply very tight; $2.40 a unit of protein, f.o.b. West Coast.
**Ft. Worth:** Demand good; limited offerings for nearby pickup; 65% Peruvian $154.50, immediate, f.o.b. Houston.
**Boston:** Demand good; supply improving; $157.
**San Francisco:** Demand good; supply tight; $2.35 a unit of protein.
**Milwaukee:** Demand and supply fair; 60% $159.
**New Orleans:** Demand and supply light; trend steady; menhaden, 60% $162@164; scrap $158@159, f.o.b. Gulf.
**Los Angeles:** Demand good; trend firm; supply scarce; local production, 60% protein $2.45@2.50 a unit.
**Atlanta:** Demand good; trend steady; supply limited; 60% menhaden $135, f.o.b. Atlantic and Gulf ports, June-July, subject to production; Angola fish meal $166 @168, f.o.b. ports.
**Cincinnati:** Demand fair; trend steady; supply adequate; $164.
**Ogden:** Supply normal; $2.20 a unit, f.o.b. Coast; 65% $172@174.
**Chicago:** Demand fair; trend slightly easier; supply tight; eastern menhaden meal, 60% protein $160@162, Gulf; western blended, 60% protein $180, delivered Midwest; Canadian herring, 74% protein $2.22@2.25 a unit of protein, subject to production; sacked scrap, menhaden $158, burlaps, f.o.b. cars, East Coast ports.
**Portland:** Demand good; supply limited; trend unchanged; $2.25 a unit.
**Buffalo:** Demand good; trend steady; supply limited; 60% protein menhaden $175 bulk, $180 sacked.
**Minneapolis:** Good demand; tight supplies; firmer trend for 70% herring; 60% blended fish meal $180, Minneapolis; 70% herring meal $2.22 a unit, West Coast; May-June $2.25 a unit.

### HAY

**Philadelphia:** Demand slow; supply light; $28@30.
**Louisville:** Demand dull; trend steady; supply heavy; local hay, No. 1 $25@30, No. 2 $25; straw $20.
**Denver:** Demand average; trend fair; supply ample; alfalfa, baled $24@25, first and second cutting.
**Wichita:** Demand poor; supply ample; prairie $15, alfalfa $15@18.
**Ft. Worth:** Demand fair for alfalfa, practically nil for prairie and Johnson grass; supply sufficient; carlots, baled, No. 1 alfalfa $38@40, No. 2 $36@38; prairie No. 2 $26@28; No. 2 Johnson grass $24@26, delivered Texas common points.
**Boston:** Demand and supply steady; No. 2 timothy $40@42.
**Los Angeles:** Demand moderately active; trend steady; supply ample; new crop, U.S. No. 1 $35@37; new crop, U.S. No. 2 leafy $33@34, U.S. No. 2 green $28@30, U.S. No. 2 $24@26.
**Portland:** Demand good; supply limited; trend unchanged; $34.
**Ogden:** Supply average; $1@1.25 bale; $18 ton in the barn.
**Cincinnati:** Demand poor; trend steady; supply adequate; No. 1 timothy $24; No. 1 second cutting green alfalfa $31; mixed $27; wheat or oat straw $19.

### HOMINY FEED

**Louisville:** Demand slow; trend strong; supply light; $51.50, up $3.
**Boston:** Demand good; supply steady; $57.50.
**Milwaukee:** Demand good; supply fair; $48.
**St. Louis:** Demand slow; trend steady; supply limited; yellow $49.50.
**New Orleans:** Demand fair; trend steady; supply fair; $51.50@52.
**Kansas City:** Demand has been fairly good but slacked off with sag in middlings price; trend weaker; supply adequate for lesser demand; yellow $39.50 bulk, $3.50 more for sacked.
**Buffalo:** Demand good; trend steady to higher; supply fair; $54.50, bulk, Boston.
**Memphis:** Demand poor; trend higher; supply ample; white $47, yellow $49.
**Cincinnati:** Demand fair; trend higher; supply adequate; $50.
**Chicago:** Demand good; trend higher; supply tight; $48.50@49.

### LINSEED OIL MEAL

**Philadelphia:** Demand and supply fair; trend unsettled; 24% $94.50, nominal.
**Louisville:** Demand slow; trend weak; supply light; old process $99, off $4.50; new process $87.50, off $5.
**Denver:** Demand fair; trend steady; supply tight for April; $88.50.
**Omaha:** Demand fair; trend easy; supply ample; 34% solvent $75.80, bulk; 32% old process $86.30, Omaha basis.
**Wichita:** Demand slow; supply ample; 34% $86.
**Ft. Worth:** Demand poor; supply adequate; solvent $100 rail, $96.50 truck; old process 34% $92, sacked, delivered truck.
**Boston:** Demand slow; supply light; $92.
**San Francisco:** Demand fair; supply ample; new crop $75.
**Milwaukee:** Demand good; supply fair; old process for April, nominal $88.50@90.50, May-June $76; new process for April $81.50@82.50, May-June $71.
**New Orleans:** Demand slow; trend steady; supply ample; $82@86.
**Los Angeles:** Demand fair; trend steady; supply adequate; local production, 29% protein $72, bulk.
**Kansas City:** Demand fair; trend steady; supply tight but generally adequate for demand; solvent meal $70.50@71, bulk, Minneapolis; old process meal, not available for spot, $76 for last week in April.
**Minneapolis:** Tight for April due to lack of supplies; demand quite good; solvent meal $73@75, bulk, for the first half of April; $70.50@71.50 for last half; May $60.50.
**Cincinnati:** Demand poor; trend lower; supply limited; new process $85; old process $82.
**Chicago:** Demand very good; trend higher; supply good; solvent $77, expeller $91, nominal, Minneapolis basis.
**Portland:** Demand slow; supply ample; trend unchanged; $87.

### MALT SPROUTS

**New Orleans:** Demand fair; trend steady; supply adequate; $42@44.
**Milwaukee:** Demand good; supply fair; odd weights $36; even weights $38.
**Boston:** Demand and supply limited; $42.50.
**Cincinnati:** Demand fair; trend steady; supply adequate; No. 1 $42@42.50.
**Chicago:** Demand slow; trend higher; supply fair; No. 1 $46.50, No. 2 $41.50.

### MEAT AND BONE MEAL

**Kansas City:** Demand improved; trend steady; supply fairly tight; 50% meat and bone scraps $107.50.
**New Orleans:** Demand good; supply ample; trend steady; $106@107.50.
**St. Louis:** Demand good; trend higher; supply light; $113.
**Los Angeles:** Demand good; trend firmer; supply limited; 50% protein $2.10 a unit.
**San Francisco:** Demand good; supply ample; $2.05 a unit, plus $2.50 for sacks.
**Boston:** Demand good; supply adequate; $1.65 a protein unit; converted 50% $95.
**New York:** Demand good; trend upward; supply fair; 50% $95, 55% $103, bulk; 50% $98, 55% $104, sacked.
**Ft. Worth:** Demand fair; supply sufficient; meat and bone, 50% $102.50@105, f.o.b.
**Wichita:** Demand moderate; supply sufficient; 50% $110, f.o.b. plant; 55%, no quotations, no offerings.
**Omaha:** Demand fair; trend steady; supply ample; $108.
**Denver:** Demand good; trend very firm; supply below normal; 50% $105, bagged, truck lots; $107.50, bagged, small lots.
**Louisville:** Demand fair; trend firm; supply good; $105@115.
**Chicago:** Demand fair; trend higher; supply light; 50% protein $100@105.
**Ogden:** Supply average; $110 in 100-lb. bags.
**Portland:** Demand good; supply limited; trend unchanged; $2.10 a unit.
**Buffalo:** Demand good; trend higher; supply ample; 50% meat scraps $102.50 bulk, $107.50 sacked.
**Cincinnati:** Demand good; supply fair; trend strong; 50% meat and bone scraps $102.50.
**St. Paul:** Fair demand; fair supplies; steady trend; 50% meat and bone $106 @112.

### MILLFEED

**Minneapolis:** Not much being offered, not much available; market very quiet at $45.50@46 for bran; $46@47 for middlings and $50@52 for red dog.
**Kansas City:** Demand good for sacked feeds, fair for bulk; trend weaker late in week; supply tight on sacked shorts, others adequate; bran $41.50@42.25, shorts $47@47.75, sacked; bran $38.50@39.25, shorts $43.50@44.25, middlings $42.50@43.25, bulk.
**Wichita:** Demand good for bran, strong for shorts; supply sufficient for bran, tight for shorts; basis Kansas City: bran $41.50@42, shorts $47.25@47.75; bran advanced 75¢ and shorts $3, compared with the preceding week.
**Ft. Worth:** Demand good; offerings light; carlots, burlaps, bran $50.50, gray shorts $56.50, bulk middlings $54, delivered Texas common points; 50¢@$1 higher on bran, $1.50@2.50 higher on shorts and $3.50 higher on middlings compared with previous week.
**Chicago:** Trade in the millfeeds in the central states area, according to trade spokesmen, has turned disappointingly light and in marked contrast to a week ago. Practically all of the fresh business is for comparatively nearby shipment. Mills are reporting satisfactory running time and they have been keeping busy filling previous contracts on the feeds. Quotations: bran, sacked $49.50 and bulk $46.50@47; standard midds., sacked $51.50@52, bulk

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$48.50; red dog, sacked $52.50 and bulk $48.50.

**Omaha:** Demand fair; trend strong; supply tight; sacked bran $42.50; sacked gray shorts $49; bulk standard midds. $47, all Omaha basis.

**Cincinnati:** Demand poor; trend higher; supply adequate; bran $57.50, middlings $58.50.

**St. Louis:** Demand good; trend steady; supply adequate; sacked, bran $47@47.50, shorts $52.50@53; bulk, bran $43@43.50, shorts $48.50@49, middlings $48@48.50.

**Memphis:** Demand poor; trend steady; supply light; wheat bran $49.50, sacked; gray shorts $55.50, sacked; standard midds. $52.30, bulk.

**Boston:** Demand active; supply spotty; bran $61.50, middlings $62.50.

**Buffalo:** Quiet demand depressed bran and middlings last week despite light flour mill running time. Mixer business was good but not as good as it has been recently. Price advances caused some resistance and buyers bought for spot only. Supplies for the current week were thin. Despite a country-wide drop in prices, local levels are still below the West. Good demand for the South sent red dog $4 higher and the advance held. The $4.50 differential between sacked and bulk items was maintained. Bulk and sacked bran and middlings ended the week $1 lower. Quotations April 8: Sacked bran $51@51.50, bulk $46.50@47; sacked middlings $52.50, bulk $48; sacked red dog $55@59, bulk $54@54.50.

**Philadelphia:** Demand spotty; trend unsettled; supply fair; bran $60, standard midds. $61, red dog $67.

**New York:** Demand excellent; trend upward; supply poor; bran $61.50@62; standard midds. $62.50@63.

**New Orleans:** Demand fair; trend steady; supply adequate; sacked, bran $54.50@55.25, shorts $55@55.75; bulk, bran $50@50.75, shorts $56.50@57.25.

**Louisville:** Demand fair; trend strong; supply ample; bran $53.10, up $1; mixed feed $56.35, up $2; shorts $60.10, up $3; middlings $61.30, up $3.

**Denver:** Demand fair; trend steady; supply ample; shorts $50.75, bran $46.25, mill run $48.

**Portland:** Demand fair; supply limited; trend unchanged; $43.

**Ogden:** Supply average; to Utah and Idaho: red bran and mill run $42, middlings $47; to Denver: red bran and mill run $49, middlings $54; to California: red bran and mill run $49.50, middlings $54.50, f.o.b. San Francisco and Los Angeles.

**Los Angeles:** Standard mill run $45@46, fair demand, steady trend, adequate supply; red bran $55@56, slow demand, firmer trend, ample supplies.

**San Francisco:** Demand good; supply tight; millfeed $49, red bran $56.


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### MINERAL FEED

**San Francisco:** Demand steady; supply good; all-purpose with iodine $70.

**Portland:** Demand slow; supply limited; trend unchanged; $42.

**Ogden:** Supply average; $113 in 50-lb. blocks; $103, granular, 50-lb. bags.

**Ft. Worth:** Demand good; supply sufficient; all-purpose granules $90, block $97; mineral phosphorus 6% granules $105, block $110; cattle-sheep mineral 7% phosphorus granules $100, block $107; hog-mineral phosphorus 3½% granules $87, phosphorus 2% $77 (all in 50-lb. paper bags).

**Wichita:** Demand moderate; supply sufficient; all-purpose with iodine, 50-lb. blocks $97.50, 100-lb. bags $92.50, f.o.b. plant.

**Denver:** Demand good; trend steady; supply ample; $155.

**Sioux City:** 50-lb. mineral blocks 8.2% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $4 each.

### MOLASSES

**Kansas City:** Demand slow; trend steady; supply ample; 12¢ gal., tank car, New Orleans, for spot; 12½@13¢ gal. for May-September.

**Los Angeles:** Demand good; trend steady; supply adequate; $22, bulk, f.o.b. tank cars; $22.25, bulk, f.o.b. tank trucks.

**New Orleans:** Demand fair; trend steady; supply adequate; 12½¢ gal., tank cars and trucks; 400-lb. customers' drums $8.33.

**St. Louis:** Demand slow; trend steady; supply ample; 12¢ gal., New Orleans.

**Milwaukee:** Demand fair; supply good; blackstrap 12¢ gal., f.o.b. New Orleans.

**San Francisco:** Demand and supply good; $22, f.o.b. cars, Richmond, Cal.

**Boston:** Demand steady; supply adequate; 16½¢ gal. in tank cars.

**New York:** Demand fair; trend steady; supply good; blackstrap 16¢ gal., tank cars, tank wagons, f.o.b. New York.

**Cincinnati:** Demand fair; trend steady; supply adequate; 12¢ gal., New Orleans.

**Buffalo:** Demand and supply good; trend steady; 16½¢ gal., f.o.b. Albany.

**Ft. Worth:** Demand good; supply sufficient; blackstrap 12½¢ gal., f.o.b. Houston; delivered Ft. Worth, truck $28.07 ton, seller's market price on date of shipment.

**Louisville:** Demand slow; trend steady; supply normal; tank car lots, f.o.b. Gulf ports 12¢ gal.

**Denver:** Demand fair; trend steady; supply ample; 12¢ gal., New Orleans; $20.52 ton, New Orleans.

**Atlanta:** Demand fair; trend steady; supply ample; citrus $20@22.50, bulk, f.o.b. Florida producing mills.

**Memphis:** Demand slow; trend steady; supply plentiful; blackstrap 12¢ gal., tank car, f.o.b. New Orleans and $28.50 ton, delivered Memphis, truck.

**Minneapolis:** Fairly good demand for nearby; ample supplies; steady trend; 12¢ gal., New Orleans; $33.50 ton, delivered tank trucks, Minneapolis.

### NIACIN

**New York:** Trend steady; $5 kilo, 10-kilo lots; $8.20 kilo, 5- and 2½-kilo lots; $8.30 kilo, 1-kilo lots; freight prepaid or paid to destination.

### OAT PRODUCTS

**Cincinnati:** Demand poor; trend steady; supply adequate; pulverized white oats $49@51.50; rolled $83.

**Portland:** Demand slow; supply limited; trend unchanged; rolled $65, ground $62, cleaned $65.

**Chicago:** Demand slow; trend higher; supply good; reground oat feed $13.50; fine ground feeding oatmeal $69@70; feeding rolled oats $78@79.

**Los Angeles:** Demand fair; trend unchanged; supply adequate; pulverized, local production $62.

**Boston:** Demand and supply steady; white pulverized $57; reground oat feed $24.

**Minneapolis:** Demand improved slightly; ample supplies; steady trend; crimped oats up $2 to $57, other products steady; feeding rolled oats $77; feeding oatmeal $67.50; pulverized $45.50; reground oat feed $18.

**Ft. Worth:** Demand slow; supply sufficient; oat millfeed $49.70; reground oat millfeed 4% protein, sacked $30; 3% $27.70.

**Louisville:** Demand fair; trend firm; supply ample; reground $22.30, rolled $83.80, feeding $78.30, pulverized $53.30, crimped $67.80.

**Philadelphia:** Demand slow; supply fair; pulverized white $54; Canadian oat feed $31.50; domestic oat feed $25.50.

**Memphis:** Demand poor; trend weak; supply ample; 3½% protein, reground oat feed $18.75.

### OYSTER SHELL

**Cincinnati:** Demand fair; trend steady; supply adequate; $24.45.

**Portland:** Demand good; supply ample; trend unchanged; western $34, eastern $33.50, granite grits $28, shell flour $24.

**Los Angeles:** Demand fair; trend steady; supply ample; $14.80.

**New Orleans:** Demand good; trend firm; supply ample; $24.50@25.

**San Francisco:** Demand fair; supply ample; local $15, eastern $20.

**Boston:** Demand and supply steady; $26 in paper.

**Louisville:** Demand good; trend firm; supply normal; in 80-lb. paper $23.45; in 50-lb. paper $23.70; in 25-lb. paper $25.95.

### PEANUT OIL MEAL

**Milwaukee:** Demand and supply fair; 36% $42.

**Atlanta:** Demand fair; trend steady; supply limited; 45% $62, sacked, f.o.b. Georgia and Alabama producing mills.

### PEAT MOSS

**Portland:** Demand good; supply limited; trend unchanged; $3 bale.

**Chicago:** Demand good; trend steady; supply short; $3.85@3.95, standard 7⅘ cu. ft. bales.

**Los Angeles:** Demand and trend steady; supply ample; Canadian 6.1 cu. ft. bales $3.75.

**San Francisco:** Demand and supply fair; $3.65 bale.

**Boston:** Demand and supply steady; $3.15 bale in carlots.

**Philadelphia:** Demand good; supply light; $3 bale, f.o.b. pier.

### POULTRY BY-PRODUCTS

**Los Angeles:** Demand good; trend firmer; supply limited; $1.90 unit of protein.

**Boston:** Demand fair; supply tight; $108, f.o.b. shipping points.

**Ft. Worth:** Demand excellent; supply limited; 55% protein $112.50, f.o.b. north Texas plants.

**Atlanta:** Demand fair; trend steady; supply ample; $105.50, f.o.b. Georgia and Alabama producing mills.

### RIBOFLAVIN

**Cincinnati:** Trend steady; feed grade (in feed supplements) 4¢ gram in less than ton lots in 3.36 to 16 gm./lb. mixtures; 3¢ in ton lots or more; freight prepaid or paid to destination.

**New York:** Trend steady; feed grade (in feed supplements) 4½¢ gm. in 3.36 to 16 gm./lb. mixtures, freight prepaid or paid to destination.

### POTASSIUM IODIDE, U.S.P.

**Cincinnati:** Demand good; trend steady; 90% KI in calcium stearate or carbonate mixtures, 250-lb. drums $1.35; 200 lb. in 100-lb. drums $1.35; 100-lb. drums $1.38; 25-lb. drums $1.41, Cincinnati.

**Chittenango, N.Y.:** Demand fair; trend easier; supply adequate; 90% KI stabilized with calcium stearate, 200 lb. in 100-lb. cartons $1.30; 100-lb. cartons $1.32; in 25-lb. cartons $1.45; freight paid to any destination.

### RICE BY-PRODUCTS

**Los Angeles:** Demand fair; trend unchanged; supply limited; bran, California production, high fat content $59.

**San Francisco:** Demand good; supply ample; bran $45; polished $49.

**Ft. Worth:** Demand fair; offerings light; carlots, rice bran $34@36, f.o.b. south Texas rice mills; hulls $2.50, f.o.b. mills.

**Atlanta:** Demand good; trend steady; supply limited; bran $49@50.

### SCREENINGS

**Cincinnati:** Demand fair; trend steady; supply adequate; malt house $26.40@30.40, Minneapolis; Canadian $39, bulk, Cincinnati.

**Buffalo:** Demand good; trend steady; supply fair; ground, sacked $44, New York; bulk, unground $36.50, New York.

**Minneapolis:** Supplies very limited due to closed navigation and shortage of domestic supplies; demand very limited; lights $10@20; mediums $21@30; heavies $31@40; Canadian bulk off $1 to $27.50; Canadian, ground $36.50; flaxseed screenings $35; oil type flaxseed screenings $45, basis 15%.

**Chicago:** Demand fair; trend steady; supply ample; ground grain screenings $37.50, nominal.

**Ft. Worth:** Demand slow; supply sufficient; ground grain $28.

### SOFT PHOSPHATE WITH COLLOIDAL CLAY

**Atlanta:** $20.40@20.67.
**Buffalo:** $25.31@25.45.
**Chicago:** $24.77@24.90.
**Cincinnati:** $23.47@23.60.
**Des Moines:** $25.23@25.35.
**Kansas City:** $24.88@25.
**Memphis:** $22.20@22.47.
**Minneapolis:** $25.92@26.06.
**Philadelphia:** $24.32@24.95.
**St. Louis:** $24.14@24.27.

### SORGHUMS

**Los Angeles:** Demand steady; trend firmer; supply adequate; milo $2.57½ cwt.

**Ft. Worth:** Demand good; offerings light as most stocks are under government plan; carlots, bulk, No. 2 yellow milo $2.41@2.43, delivered Texas common points.

### SOYBEAN OIL MEAL

**Kansas City:** Demand slow; trend steady to weaker; supply adequate; meal for Kansas City and western shipment $53@53.50, bulk, Decatur; unrestricted $56@57.

**Los Angeles:** Demand and trend steady; supply ample; $78.90, bulk.

**New Orleans:** Demand fair; trend steady; supply adequate; $66.50@67.

**Minneapolis:** Not much demand for heavier supplies brought slight downturn; 44% meal $50.50@51, bulk, Decatur, for Minneapolis delivery; 50% $59.

**Atlanta:** Demand fair; trend steady; supply ample; 44% $72.

**Memphis:** Demand good; trend steady; supply ample; prime 44% solvent $66, f.o.b. Memphis.

**Chicago:** For the week ending April 8 soybean oil meal prices came in for a still further upward readjustment and asking prices are just about an even dollar over those of a week back. Demand has held up well, and according to trade spokesmen, buyers have become a little more impressed with the disappointing movement of raw beans from the country into the primary markets. This in turn is making for a feeling that a holding tendency on the part of growers in the Midwest bean area might be translated into not only continued firmness in meal prices but possibly some further price advances as processors eat into their own stocks. In the meantime, the USDA remains optimistic over the prospect for moving 90 million bushels of soybeans into export channels this crop year. So far, more than 61 million have been inspected for export which is about 5 million bushels more than the same seasonal period last year. Quotations: 44% protein, bulk, Decatur basis, unrestricted $56.50@57; eastern restricted $54.50@55; 50% protein, unrestricted $61@62; eastern restricted $59.50@60.

**St. Louis:** Demand slow; trend lower; supply ample; 44% $56.50.

**Milwaukee:** Demand good; supply fair; $54.50 bulk, Decatur.

**San Francisco:** Demand good; supply ample; $84.40.

**Boston:** Demand good; supply adequate; 44% $56.50; 50% $62, both f.o.b. bulk, Decatur.

**Ft. Worth:** Demand fair; supply sufficient; carlots: southern origin, 44% April $72.60, May-September $74.80; truck $74.50


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@75.50; 50%, April $81.40, May-September $84.80.

**Wichita:** Demand good; supply adequate; 44% $70, 50% $78, f.o.b. Wichita.

**Omaha:** Demand poor; trend steady; supply ample; 44% $63.90, bulk.

**Denver:** Demand fair; trend firmer; supply ample; $80.20.

**Louisville:** Demand slow; trend easy; supply ample; $66.70, down $1.50.

**Philadelphia:** Demand and supply fair; trend unsettled; 44% $55.50, bulk, Decatur.

**Cincinnati:** Demand poor; trend higher; supply adequate; $56.50, bulk, Decatur.

**Portland:** Demand moderate; trend higher; supply ample; $53, f.o.b. Decatur.

**Ogden:** Supply normal; $81@86.

**TANKAGE**

**St. Paul:** Fair demand; fair supplies; steady trend; 60% digester $109@111.

**Kansas City:** Demand fairly slow; trend steady; supply adequate; 60% digester $110.

**New Orleans:** Demand fair; trend steady; supply adequate; $120.50@122.

**St. Louis:** Demand good; trend higher; supply light; $113.

**Ft. Worth:** Demand fair; supply very scarce; 60% digester $105@107.

**Cincinnati:** Demand fair; trend steady; supply ample; 60% digester $110.

**Chicago:** Demand and supply fair; trend higher; 60% protein $112.50 in 100-lb. bags.

**Wichita:** Demand moderate; supply sufficient; 60% $115, f.o.b. plant.

**Omaha:** Demand fair; trend steady; supply ample; $112.

**Louisville:** Demand fair; trend steady; supply good; 60% protein $110@120.

**VEGETABLE AND ANIMAL FAT (HYDROLYZED)**

**Ft. Worth:** Demand good; limited offerings; 6¾¢ lb., f.o.b. north Texas area.

## INSTITUTE

(Continued from page 1)

try and in our institutions to the changing patterns which are evolving. We must learn how to adjust to our economic environment as successfully as we have adjusted to our physical environment.

"2. We must, within the framework of our free society, give intelligent direction to the economic and social changes which engulf us. It is within our capacity to give some degree of direction to our economic environment, just as we do to our physical environment."

In an opening address, Dr. Butz said the National Institute of Animal Agriculture can help solve these problems by providing a forum in which leaders of all phases of animal agriculture exchange ideas and test opinion against opinion.

**CHANGING PATTERNS IN LIVESTOCK PRODUCTION**—This topic, of considerable interest to feed men, was covered by N. S. Hadley, agricultural economist at Purdue.

While certain changes will continue, Mr. Hadley feels that the modest-size, less intensive operations will be able to compete for a long time, and that management of the production phase of agriculture is likely to remain largely in the hands of the farmer.

Farms will continue to get larger and fewer. Size of enterprise helps reduce unit costs of production up to about 1,000 hens, 25 dairy cows, 20-30 brood sows, and 75-100 steers. But beyond these points unit costs are not greatly reduced, Mr. Hadley said. Complexity of operation increases several times more rapidly than increase in size of enterprise. Therefore, management becomes a limiting factor on most farms when the size reaches four or five times these numbers.

Mr. Hadley also noted the trend toward more specialization, which helps increase size of business with limited management. However, complementary relationships between certain enterprises greatly limit the degree to which specialization can be carried. In most livestock enterprises, an increased percentage of total production will come from large intensified specialized operations. But the smaller, less intensive operation "will be able to compete for a long time."

"Coordination of movement of farm products through the supplier, producer, processor and distribution channels will be improved, partly by more perfect information and partly by contractual arrangements," Mr. Hadley said, "but the management of the production phase of agriculture is likely to remain largely in the hands of the individual farmer." He gave the following reasons for this belief: (1) Many phases of farming are still largely arts; no formula can be written to insure their success. (2) Farming is largely a business of dispersed labor force; supervision is difficult and costly. (3) There is little advantage in integrating production of field crops, and there is a high degree of complementary relationship between crop and livestock production. (4) Farms of the future will be run by highly competent managers. (5) Many people will work for themselves for somewhat less than they would for someone else.

As far as geographical shifts are concerned, Mr. Hadley feels these will be largely governed by changes in patterns of feed production and population growth. Changes in livestock production will follow these changes in land use as well as in population center. But to a large degree, hogs will continue to be grown where the grain is, cattle and sheep where the grass is and poultry where the labor is.

Mr. Hadley foresaw the following changes in livestock enterprises:

**Dairy:** The dairy business will be largely concentrated on land adapted to grass production and will be almost entirely associated with fluid milk markets. Herds will be larger and fewer, with total numbers declining and production per cow increasing rapidly. Because of improved preservation and transportation, proximity to market will be of less importance. There will be a tendency to disassociate milking operations and production of heifers.

**Poultry:** Most phases will continue to be largely highly commercial, well coordinated business of large units. However, control of production may gravitate back to large individual producers who may continue to perform many coordinating functions through bargaining and contractual relationships for supplies and markets. In eggs, the small farm flock is about gone, but there is little evidence that producers with 10,000 hens can produce eggs more efficiently than those with 1,000.

**Hogs:** First, there is a trend toward specialization within the hog enterprise. Farmers who raise pigs and feed them out will long continue to produce most of the hogs. But there is a strong trend for one farmer to raise feeder pigs and another to feed them out.

Another major change is in intensified hog production. Many farmers have found it necessary to greatly increase production in order to hold up their incomes. But this has brought problems, too, and in adopting new methods, these farmers have not greatly reduced costs of producing a pound of pork. Studies show there are no great economies of scale or size in the hog business at the present time. This is particularly true in the pig raising part of the business. More hogs will be produced in large, specialized business, but the small skillful operator will be able to compete for a long time.

**Cattle:** Lower prices and increased costs are making production of grain unprofitable on low-producing land. This, coupled with employment opportunities outside agriculture, will eventually force large acreages out of grain and into a grass and livestock economy. Increased grass will mean less corn, pork and poultry and increased beef production. Beef cow herds and ewe flocks will be fewer and larger, but no great technological change is seen. They will continue to be specialized in the range states and to some extent in the South but may continue to be secondary in most humid areas, particularly the Corn Belt.

Cattle feeding will change greatly: (1) There will be a rapid increase in feeding, with substantial growth in the Corn Belt as well as the West. (2) Most of the increase will be in short fed cattle. (3) Will be a marked increase in more specialized feeding methods; grain silage will practically replace hay. (4) Factory-like assembly line operations will increase in the West and develop rapidly in the Corn Belt; but the farmer-feeder will be able to compete because of complementary advantages in use of labor, machinery and manure in crop production. (5) Seasonal distribution of marketings will be smoothed out. (6) Will be a continued demand for moderate finish compared to prime grade. (7) As a result of improved feeding methods there will be gradual increase in weight to which cattle are fed.

**NATIONAL INSTITUTE—Discussing the theme—"Changing Patterns in Animal Agriculture"—of the ninth annual conference of the National Institute of Animal Agriculture at Purdue University are (from left): Dr. O. B. Jesness, retired head, department of agricultural economics, University of Minnesota; Hasail E. Schenck, Purdue trustee and retired president, Indiana Farm Bureau, Lebanon, Ind.; Dr. Earl L. Butz, Purdue's dean of agriculture, and Hobard Creighton, poultryman, Warsaw, Ind.**

**ADJUSTING MY BUSINESS TO THESE CHANGES**—After the various discussions, Dr. L. S. Hardin, Purdue agricultural economist, pointed to some of the things that must be considered as an individual adjusts his business to the changes that were outlined.

First, in planning ahead, there is the question of obtaining the resources required for a business. Here, it is apparent that one resource is research. If a business is to have a future, research must be an integral part of it. Capital also will be increasingly important, whether ownership is spread more widely, or whether capital is obtained by such means as leasing, or whether integration is a partial answer. Management, too, is a major resource requirement. The need is not more men per plant or per farm but more manpower or brainpower per farm or per plant.

In the second general area of planning, said Dr. Hardin, one must consider ways and means of controlling quantity and quality of production. It has been shown clearly that science has enabled man to control not only quantity of output but to predetermine its quality and its proportions much more than in the past. Also, it may be possible in the future to survey the outlook and gear production volume more to demand.

In a third area of planning, we must learn to live with and to work with government. How, asked Dr. Hardin, can we help determine the rules of the game and how can we gear ourselves to be flexible in our own businesses if more, rather than less, government appears likely in the future? This is a question that requires some consideration.

**CHANGING PATTERNS IN MARKETING LIVESTOCK AND PROCESSING MEAT**—Speculation that livestock units may become semi-automatic factories with labor cost constituting a smaller proportion of total costs than at present through integration sponsored by feed companies or packers was a thought presented at the institute by Arval Erickson, economist, Oscar Mayer & Co.

He said that in regions where there is a deficit of farm capital and management, and a surplus of labor, and where present production patterns do not meet the requirements of the packing industry, integration of production by feed and/or packing companies "seems certain to gain strength." However, he does not look for widespread integration in the Corn Belt.

Mr. Erickson, who discussed livestock marketing and meat processing at length, summarized his talk with these points:

"1. The livestock marketing and meat processing industries went through a period of concentration of resources in the early part of the century which was not too dissimilar from the type of concentration and economies of scale of operation occurring now in farm production and retailing.

"2. The meat industry has been in a decentralization trend for the last 20 years as a result of a variety of factors.

"3. The present day industry is highly competitive. It has made noteworthy gains in efficiencies of output since the war, and currently shows a high level of labor productivity. It has made important strides in the field of processed meats and in consumer packaging, but changes in the fresh meat areas have been less spectacular.

"4. The emerging trends seem to indicate that there will be larger farm producers who will probably deal more directly with the processor than they do today. Prices are more likely to be negotiated before the livestock leave the farm, and in some cases price differentials for quality and special services rendered by the producer may be determined even before the livestock are produced. The bargaining power of retailers and specification buying will force wider quality differentials in the purchase of livestock.

"5. More direct selling of livestock will have implications of change for livestock marketing groups, but their specialized skills will probably continue to be demanded by both livestock producers and packers.

"6. As packers develop more automation in their industry, entailing greater capital outlays, and as they improve packaging, particularly of fresh meat, the trend of decentralization which we have seen during the past 20 years is likely to be reversed."

"Cattle feeding has been, and will continue to be an integral part of packing in some areas," he said, "and this may grow in importance in the West and South. But in the broad Corn Belt where about 80% of the hogs are now produced and where over 50% of the final sales of cattle are now made, widespread integration by packers or feed companies is not

# Chicks Placed in Principal Broiler Areas

(000's omitted)

| Week ending | Maine | Conn. | Penn. | Ind. | Ill. | Mo. | Del. | Md. |
|---|---|---|---|---|---|---|---|---|
| January 31 | 1,280 | 576 | 709 | 639 | 181 | 738 | 2,111 | 1,741 |
| February 7 | 1,286 | 648 | 778 | 613 | 120 | 800 | 1,837 | 1,902 |
| February 14 | 1,272 | 668 | 724 | 744 | 130 | 848 | 2,063 | 1,776 |
| February 21 | 1,229 | 606 | 737 | 877 | 168 | 865 | 1,769 | 1,967 |
| February 28 | 1,164 | 601 | 843 | 816 | 176 | 829 | 1,927 | 1,814 |
| March 7 | 1,194 | 524 | 835 | 765 | 197 | 849 | 1,962 | 1,941 |
| March 14 | 1,221 | 596 | 962 | 783 | 197 | 821 | 1,851 | 2,046 |
| March 21 | 1,243 | 519 | 787 | 873 | 154 | 883 | 2,051 | 1,886 |
| March 28 | 1,231 | 496 | 690 | 961 | 183 | 845 | 1,931 | 2,084 |
| April 4 | 1,229 | 597 | 985 | 877 | 198 | 885 | 1,914 | 2,021 |

| Week ending | Va. | W. Va. | N.C. | S.C. | Ga. | Fla. | Ala. | Miss. |
|---|---|---|---|---|---|---|---|---|
| January 31 | 1,101 | 532 | 2,846 | 316 | 5,943 | 178 | 2,964 | 2,059 |
| February 7 | 1,094 | 572 | 2,932 | 363 | 6,233 | 236 | 3,104 | 2,046 |
| February 14 | 1,168 | 580 | 3,084 | 404 | 6,270 | 205 | 3,263 | 2,109 |
| February 21 | 1,129 | 586 | 3,070 | 373 | 6,419 | 239 | 3,202 | 2,302 |
| February 28 | 1,249 | 700 | 3,214 | 360 | 6,626 | 246 | 3,228 | 2,308 |
| March 7 | 1,295 | 680 | 3,143 | 357 | 6,888 | 263 | 3,278 | 2,469 |
| March 14 | 1,326 | 625 | 3,164 | 437 | 7,094 | 232 | 3,708 | 2,608 |
| March 21 | 1,219 | 731 | 3,384 | 377 | 7,305 | 239 | 3,514 | 2,593 |
| March 28 | 1,273 | 678 | 3,376 | 379 | 7,440 | 216 | 3,661 | 2,609 |
| April 4 | 1,356 | 637 | 3,307 | 413 | 7,173 | 264 | 3,712 | 2,540 |

| Week ending | Ark. | La. | Texas | Wash. | Oregon | Calif. | Total 22 areas 1959 | Total 22 areas 1958 |
|---|---|---|---|---|---|---|---|---|
| January 31 | 3,172 | 433 | 2,136 | 375 | 205 | 1,108 | 31,343 | 28,826 |
| February 7 | 3,044 | 396 | 2,180 | 339 | 240 | 1,074 | 31,837 | 29,640 |
| February 14 | 3,276 | 412 | 2,214 | 382 | 218 | 1,163 | 32,756 | 29,495 |
| February 21 | 3,377 | 511 | 2,288 | 393 | 234 | 1,130 | 33,471 | 30,777 |
| February 28 | 3,392 | 509 | 2,267 | 343 | 283 | 1,164 | 34,069 | 30,808 |
| March 7 | 3,580 | 450 | 2,471 | 345 | 267 | 1,176 | 34,722 | 30,406 |
| March 14 | 3,713 | 575 | 2,419 | 363 | 301 | 1,068 | 35,944 | 29,843 |
| March 21 | 3,822 | 494 | 2,271 | 356 | 257 | 1,165 | 36,123 | 29,291 |
| March 28 | 3,761 | 505 | 2,475 | 350 | 246 | 1,213 | 36,603 | 30,134 |
| April 4 | 3,745 | 559 | 2,558 | 232 | 268 | 1,207 | 36,677 | 31,793 |

so likely to occur. Here there is an abundance of good farm managerial ability which has access to capital. And the pattern of production gives the packers the assurance of a continual supply of livestock."

Mr. Erickson observed that "some packers, undoubtedly, have given consideration to the advantages and the costs of producing a significant portion of their livestock needs," and noted that capital requirements to do this are "very large, indeed." He said these costs would be "a real deterrent" to packers or feed companies moving into the production and feeding of livestock on an ownership basis.

"It seems more likely," he said, "that control of decision-making in the production of livestock in the Corn Belt will remain with the efficient and aggressive farmers. Such farmers may integrate other farmers and thus manage the production of large numbers of livestock.

"They may consider it to their advantage to set up their own feed mixing facilities and to handle their own marketing. This concentration will change livestock marketing methods and packer procurement policies."

**CHANGING PATTERNS IN FOOD DISTRIBUTION** — Henry J. Eavey, president, Super Market Institute, commented in his address, "I believe that you as producers, and all of us in the field of food distribution—the retailers I represent, and the processors and wholesalers who work with us — are heading for a particularly difficult period."

He said he believes the future will be difficult because "we will be called upon to think in two directions at once." Explaining this thought, Mr. Eavey said, "In the immediate future we face an intensification of the problems we find current—rising costs, the need for greater productivity, a high degree of competition, the continuous demand for a real, imaginative effort of merchandising and promotion. To these should be added the burden of heavy farm and pasture production which compounds all our other problems."

Mr. Eavey asked, "How far back along the relay of food movement can we place the new methods of food preservation, the new packaging machines, the new wrapping materials that allow food to 'breathe'?

"If these are not properly a function of the retailer who does them now, are they then a proper function of the wholesaler, or the primary buying cooperative, or the shipping point, or perhaps the farm producer himself?"

He suggested the possibility of some of these "duties" being taken over at the "farm and pasture level." This shift, he said, might be "the only way we can break out of the shaky stalemate between expensive farm price supports and the crushing load of bumper farm production."

In Mr. Eavey's thinking, the producer, the processor, the wholesaler, the retailer and others who have a part in the food industry "can no longer work in separate compartments, saying one to another, 'This is your job—that is mine'."

He said, "We must experiment daringly and let the economic results determine the best methods. The food production line of the future must be a smooth, continuous flow of products under constant control, with no semi-processed stages; no moving from one 'batch' to another.

"We in the super market field find that we do best for ourselves when we cling to the original super market concept—the low-cost mass distribution of food."

**IMPACT OF GOVERNMENT PROGRAMS ON ANIMAL AGRICULTURE** — A problem of animal agriculture noted by O. B. Jesness, retired head of the department of agricultural economics, University of Minnesota, is that of disposing of accumulated animal feeds without transferring the surplus problem to livestock.

"Hindsight suggests that a mistake was made in treating corn and feed grains as though they were mainly cash crops," he said. "Unfortunately, no one has a satisfactory way of putting paste back in the tube. We cannot escape the results of past mistakes by ignoring them, but this does not require of us that we continue to make these same mistakes in the future."

Dr. Jesness said there is no "easy, painless, costless way out of the situation we have gotten ourselves into." Stocks will have to be worked down to manageable levels, he said, a process which may take several years. "Inducements to continue to build them up need to be ended now. We just cannot continue to ask taxpayers, including farmers, to continue to pay for production which becomes a burden instead of satisfying wants."

He noted a relationship between the stage the cycle is in and the interest of livestock growers in price supports. As an example, he said that when the hog production cycle is at a peak and prices are at the low point, increasing demands for price supports on hogs are heard. "But if a benevolent government undertakes to shield hog and cattle men against the low stage in the price cycle, will it not also have to take away the gains in the high stage?"

He said that if the government is to shield producers against the consequences of their own decisions, it will need to take over decision-making in order to protect the rest of the people.

"Do hog and cattle producers want the rigor mortis of governmental controls clamped on their operations?," Dr. Jesness questioned. "The answer in the past appears to have been strongly in the negative and no change in that attitude is in sight today."

He said livestock producers will do well to take an active interest in the shaping of farm programs, even though their impacts may be indirect.

"An important point for farmers to think about," he said, "is that if the general public is going to continue to foot a sizeable bill for farm programs, it is going to insist on having more to say about the nature of the programs . . . Farmers have no monopoly on deciding what the government, that is all of us, shall do for them. Farmers will do well to give increasing weight to considerations of the public interest and common good . . .

"As far as farmers are concerned, the role of government should be that of aid in decision-making, not of taking over the making of decisions for farmers."

**THE INFLUENCE OF SCIENTIFIC DEVELOPMENT ON PRODUCTION** — Scientific developments that influence production in animal agriculture were outlined by Dr. G. W. Salisbury of the University of Illinois dairy science department. He pointed to some of the unknown horizons as well as new knowledge.

At the same time he showed how production potentials in animal agriculture will in the future be conditioned fully as much by relative economics as by scientific developments in the animal field itself.

"Science has just begun to probe into the animal field," Dr. Salisbury said. "Its potentials for increasing efficiencies are great, but whether or not these efficiencies will change the relative economic position of animal agriculture or be demanded in the future solely to keep animal agriculture, as a producer of protein for building human bodies, abreast of other developments, remains to be seen."

**TECHNOLOGICAL ADVANCES IN PROCESSING AND DISTRIBUTION OF PROTEIN FOODS**—Science and technology have a unique opportunity for application in processing and distribution of food, said Dr. B. S. Schweigert, American Meat Institute Foundation, Chicago. He noted that increased emphasis on merchandising specialty products and a maximum of quality control for increased service and profit require scientist-management teamwork.

As part of his discussion of various areas of food technology, Dr. Schweigert said it appears that there are "three major areas of advance in increasing the tenderness of beef without the need of extensive feeding of expensive concentrates." These, he said, include: (1) With tenderness a heritable characteristic, it should be possible to select breeding herds to provide increased tenderness. (2) Use of meat tenderizers will have selected application for cuts such as steaks used primarily in institutional feeding. (3) It is possible to obtain the same level of increased tenderness by high temperature aging (110° F. for 24 hours) as that obtained by conventional techniques (34° for 14 days) if bacterial spoilage is controlled by antibiotics.

**CHANGING PATTERNS IN PRODUCTION AND CONSUMPTION OF ANIMAL PRODUCTS** — Some general principles which are suggestive of the forces at work in the changing patterns of consumption and production of animal products were discussed by Prof. Elmer R. Kiehl, University of Missouri agricultural economist.

For one thing, Prof. Kiehl mentioned population shifts, and he indicated that the density of population across the U.S. will tend to become less between the mountains. This means pressure on certain areas to reexamine their costs of production. Prof. Kiehl also examined the impact of technology on location of enterprises.

Other things being equal, he said, whether or not important shifts in location of feeding can take place is dependent in part on relative transportation costs of inputs vs. products. Feeding enterprises in feed deficit areas will be quite sensitive to freight rates. Present rates on the Mississippi River and the potential influence of the St. Lawrence Seaway suggest lower freight rates on grains and feed. It is possible that only finishing operations can take place in areas near population centers.

Relative costs of transporting hogs, for example, live or in carcass, are dependent on live and dressed meat rates and the dressing yield of hogs. When the feed conversion ratio falls, eventually a point will be reached at which it would be cheaper to move the grain to feeders on the coast. It appears we are approaching but have not reached that point yet.

Discussing the question of unit cost reductions through larger scale operations, Prof. Kiehl mentioned a number of considerations for the midwestern feed-livestock economy. For one thing, there is the question of specialized feeding operations vs. complementary enterprise relationships. It might be, he said, that advantages of complementary enterprises in the growing of feed offset advantages of specialization.

With a piling up of population, he continued, the eastern Corn Belt may have less problems of adjustment. The western Corn Belt may face declining relative importance of livestock feeding to the extent that complementarity cannot overcome economies of specialization and location near large markets.

Regarding the choice of business arrangements in feeding, Prof. Kiehl said a considerable "shake down" period in contractual and other arrangements is likely in the immediate future.

"Corn Belt feeding is still big league," he said. "It is possible that the new minor leagues can, through use of the best in management, technology, production and new arrangements in processing and marketing, develop arrangements which permit them to compete effectively with the Corn Belt. These new areas will not be hampered by having to unlearn other methods, nor do they have to face problems of institutional production-market resistance."

**ANIMAL AGRICULTURE** — True D. Morse, under secretary of agriculture, emphasized the point that livestock and livestock products account for about 58% of the income from marketings of farm products, "a fact the public does not well understand."

He said animal production, processing and marketing provide major employment and economic strength, and that livestock provide a major means for marketing crop production and moving surpluses into use, "which help bring our agriculture production and consumption into balance."

Mr. Morse expressed concern over the protein feed situation. He said animal agriculture "is increasingly dependent on protein feeds."

Said Mr. Morse, "There are plenty of carbohydrates, but we are not producing a real surplus of protein feeds. There is not sufficient carryover as a safety factor against a short crop. Therefore, there is reason for great concern on the part of industries associated with the livestock, dairy and poultry industries when they see farmers planning to cut back the soybean crop by 7%."

**A LAND GRANT COLLEGE LOOKS AT AGRICULTURE ADJUSTMENTS** — Dr. Floyd Andre, dean and director of agriculture, Iowa State College, said it is hoped that the Center for Agricultural Adjustment established at the college in 1957 will accomplish three things:

"1. We think the center can define or symbolize what is important to agriculture in a growing economy.

"2. Through the center, we can get the best thoughts on the subject by bringing in experts from all over the country for seminars, workshops and meetings.

"3. We hope to work cooperatively with other institutions in research and educational programs dealing with agricultural adjustment."

## MARKETS

(Continued from page 2)

It is reported that the demand for corn is good, and the Guntersville, Ala., and Chattanooga, Tenn., terminals are in much better shape, with prices advancing as much as 2¢ to 4¢ bu. this week. Truckers from the Midwest continue to be the low sellers at around $1.42 to $1.44 bu. in the Southeast.

Cottonseed meal and soybean meal prices remain practically unchanged, and most feed ingredient buyers continue to purchase their requirements as needed. Some of the Florida ranchers are buying a limited amount of low protein pellets to scatter on the range until they can get a better stand of grass.

Demand for citrus pulp in the South remains good, with prices unchanged. Many of the processors will be processing Valencia oranges in volume within the next week or two, and the smaller producers with no storage space have reduced their prices as much as $2 ton to get shipping instructions.

### Central States

The week ending April 8 apparently did not bring about any change in the pace in formula feed business, according to trade spokesmen.

Fresh sales appeared to be holding up to advance expectations for the industry as a whole in this area, and were showing customary seasonal betterment. A few spots showed up the week as no better than the preceding one although the latter condition was in no sense a pessimistic one. Some concerns reported that volume was running ahead of last year.

The boost in price levels resulting from the general upturn in constituent feeds did stir up business to some extent and at least stimulated some of the latent buyers who had missed the boat by a few days.

So far, there has been no visible impact resulting from the recent break in fresh egg prices, but as spokesmen were pointing out, if and when this does materialize, it will be largely with that section of the trade whose retail contacts do relatively more business with the small rather than with commercial egg producers.

### South Central

Formula feed sales are improving, possibly at a little slower pace than many had hoped for, but the volume compares quite favorably with the good record of a year ago. Operations generally are on a five-day capacity basis, although some overtime was reported as necessary over the last week-end.

Business is a little uneven, a day of brisk trade is often followed by a slow one. But this is the time of the year when this can be expected. Farmers delay picking up feed when spring field work can be done, and dealers skimp on feed stocks when fertilizer orders can be delivered.

The best volume of business is in pig starters and hog feeds. Though beginning to taper off, cattle feeds continue to be a good source of volume. Chick starters are building up slowly, with indications pointing to a disappointing season.

No change in price lists is expected this week. The rising market of the past several weeks failed to create the good buying interest usually expected with an upward trend. Orders generally are being held down to just a few days' requirements at a time.

### Ohio Valley

Although springlike weather prevailed throughout the Ohio Valley this week, farm activities continued to lag because of the heavy showers almost every day, with the resultant delays forcing further postponement of plowing, planting and other seasonal activities. Although currently aggravating to the impatient farmers, the recent heavy rainfalls, which have raised the underground water level considerably, make it unlikely that the Valley area will experience the mid-summer and fall drouth situation which threatened the area in recent years.

During this period, the sales of formula feeds are holding to good tonnages, although still reported somewhat below the volume that had earlier been expected to develop by mid-April.

The poultry and egg markets continue weak and unsettled with supplies of some grades of eggs being so in excess of demand that some area plants early this week discontinued handling and grading, with breaking plants taking most of the off grades at prices 2¢ to 3¢ below those quoted a week earlier.

Naturally as the result of this very unfavorable price ratio, egg settings were reported at levels lower than in several previous years. During the last week, prices for fryers and hens fluctuated considerably with supply and demand about balanced. However at this mid-week supplies were in excess of demand with the resultant price falloff of 1¢ lb. or more.

An interesting phase of the current poultry situation, according to local manufacturers, is the steadily increasing market for pellets, as a means of speeding growth and weight. While more expensive, many area farmers are tending to believe that the additional cost is justified.

### Pacific Northwest

Ingredient price changes were on the limited side and followed a mixed trend during last week's feedstuffs market trading which was ruled by a moderately slow demand. However, day-to-day buying interest from feeders and mixers is pretty well in line with available offerings, trade sources reported at Portland and Seattle.

Copra meal quotations posted the largest drop when they declined $2 ton during rather slow dealings while soybean meal prices dropped $1 ton. Whole barley values were unchanged to 50¢ ton lower while whole corn advanced $1 ton and milo sold 50¢ to $1 above last week.

Mixers report that the formula feed business remained large on a seasonal basis with poultry starters holding the lead in volume. Dairy feeds also faced a dependable demand at Portland and Seattle because of cool wet weather throughout most of the period.

Alfalfa hay prices continued to hold unchanged and about steady.

Producer paying price changes were limited during the week.

Producer paying prices for eggs at Portland held unchanged following the previous week's seasonal decline except for a 1¢ doz. advance at the inside of the general range for AA grade large eggs.

### Mountain States

Feed men in this area reported this week that their sales volume has been higher than the previous week and up about 10% over the same time a year earlier. Poultry feeds generally have been getting a rise in demand recently, and the demand moved up sharply during the past week.

Despite slightly higher feed prices, buying continues to be hand to mouth, with little interest in inventory building.

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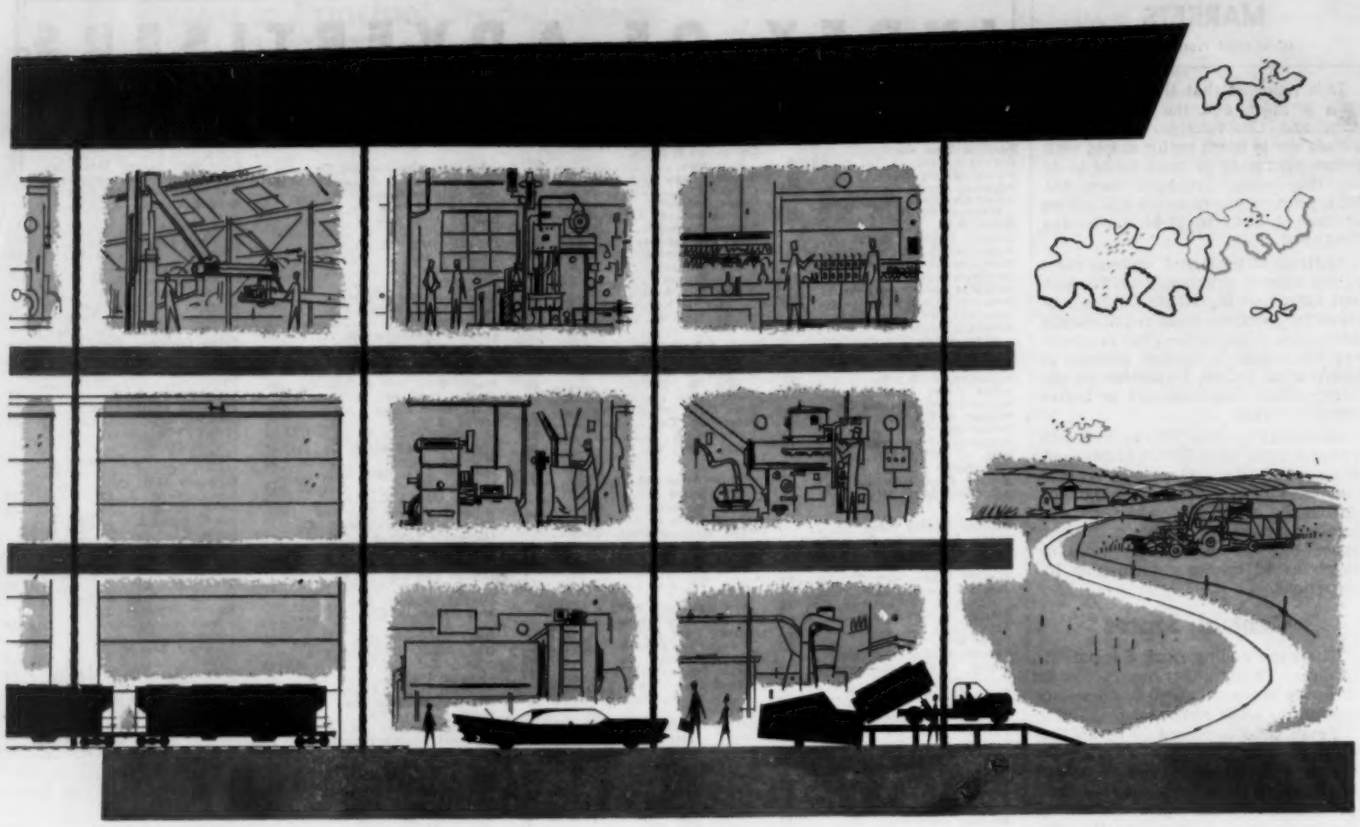

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